KIPS
ENTRY TESTS
SERIES

KIPS SATS WORKBOOK FOR MDCAT



Biology, Chemistry, Physics & English

- Chapter-Wise & Topic-Wise Learning Outcomes
- Self Assessment Tests
- Answer Key

A Kitab Dost Publication

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KIPS MDCAT WORKBOOK

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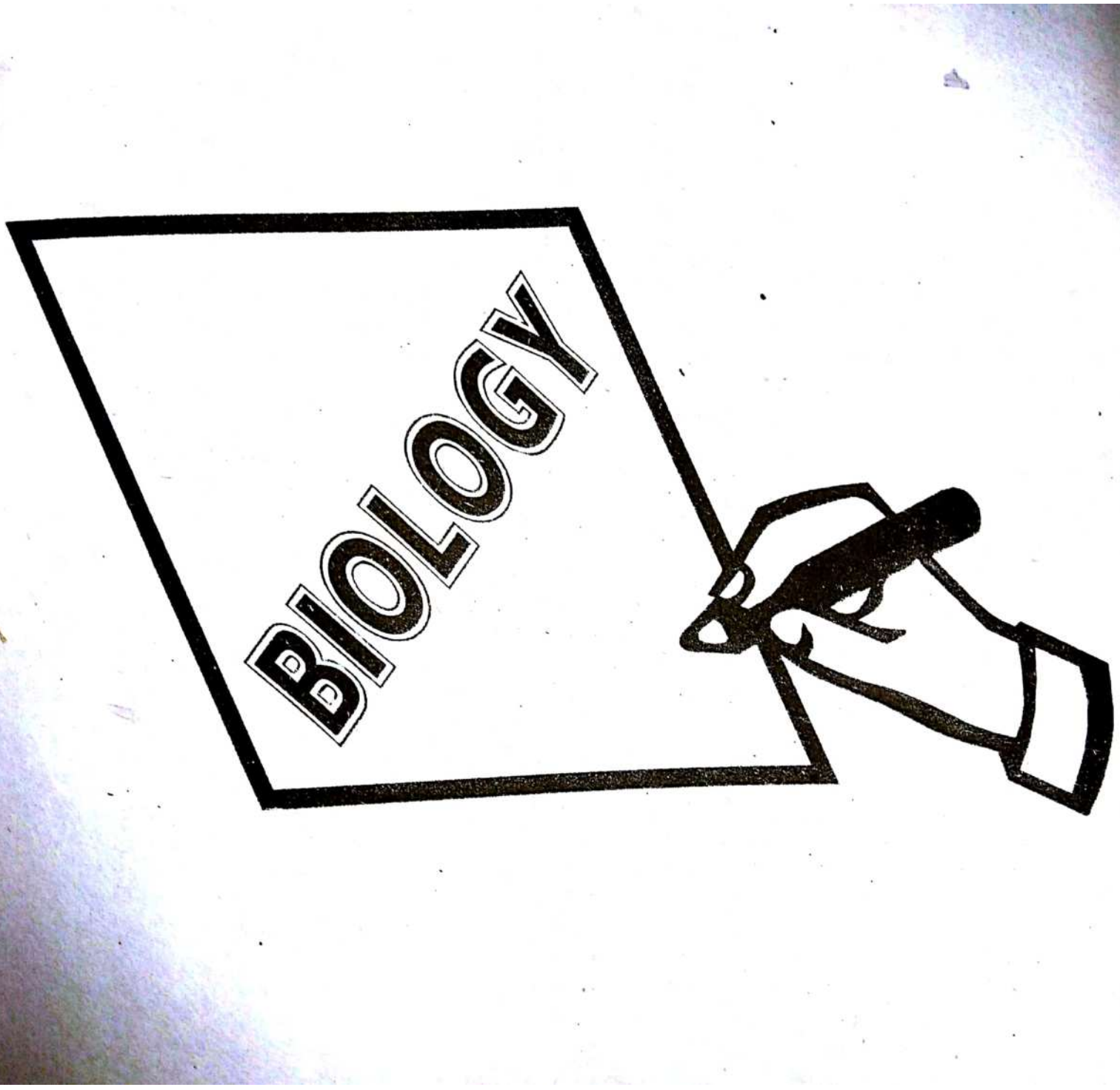
Dedicated to,

"THE KIPSIANS & KIPS FAMILY"

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KIPS UNIT- 1

UHS Topic – 1
F.Sc: Chapter # 4

Cell Biology
MCQs: 10

LEARNING OUTCOMES

- Difference between Plant and Animal Cell ☐
- Difference between Prokaryotic and Eukaryotic cell ☐

1. CELL MEMBRANE

- Chemical Composition ☐
- Unit Membrane Model ☐
- Fluid Mosaic Model ☐
- Channel Proteins, Carrier Proteins and Receptors ☐
- Active Transport, Exocytosis, Endocytosis, Passive Transport, Diffusion, Osmosis, and Facilitated Diffusion ☐

2. NUCLEUS

- Morphology, Number and Occurrence ☐
- Nuclear Membrane ☐
- Nucleolus ☐
- Chromosomes ☐
- Nucleoplasm ☐

3. ENDOPLASMIC RETICULUM

- Morphology ☐
- Types ☐
- Functions ☐

4. GOLGI APPARATUS

- Morphology ☐
- Golgi Complex ☐
- Faces ☐
- Vesicles ☐
- Functions ☐

5. MITOCHONDRIA ☐

- Morphology ☐
- Cristae, F_1 Particles ☐
- Matrix ☐
- Self-Replication ☐
- Functions ☐

6. CENTRIOLES ☐

- Morphology ☐
- Occurrence ☐
- Composition ☐
- Functions ☐

7. RIBOSOMES ☐

- Morphology ☐
- Composition ☐
- Polysome ☐
- Functions ☐

8. PEROXISOMES ☐

- Discovery and Morphology ☐
- Composition and Functions ☐

9. GLYOXISOMES ☐

- Morphology ☐
- Composition and Functions ☐

10. CYTOSKELETON ☐

- Types ☐
- Composition ☐
- Functions ☐

11. LYSOSOMES ☐

- Morphology ☐
- Composition ☐
- Functions ☐
- Storage Diseases ☐

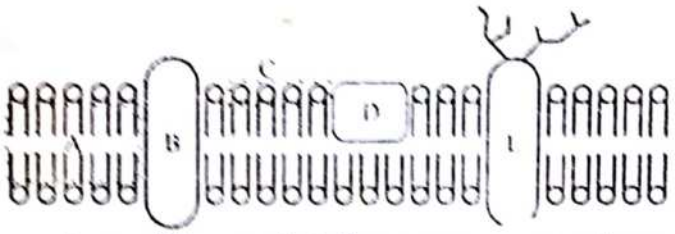
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KIPS SELF ASSESSMENT TEST

Q.1 **Some cellular organelles are bound by a single membrane, while others have two membranes around them. Which one of the following is correct?**

	Single membrane		Two membranes	
A)	Vacuole	Lysosome	Nucleus	Chloroplast
B)	Chloroplast	Lysosome	Nucleus	Vacuole
C)	Nucleus	Chloroplast	Lysosome	Vacuole
D)	Nucleus	Lysosome	Chloroplast	Vacuole

Q.2 **The diagram shows a model of the structure of a biological membrane.**



Which labeled part would restrict the movement of small, lipid-insoluble molecules?

Q.3 **Cells without nucleoli die because they do not possess:**
A) Centrioles and are unable to undergo cell division
B) Lysosomes and are unable to destroy worn out organelles
C) Mitochondria and are unable to obtain energy
D) Ribosomes and are unable to manufacture proteins

Q.4 **It is synthesized by free floating ribosomes of cytoplasm in humans:**
A) Pancreatic lipase
B) Insulin
C) Salivary amylase
D) DNA helicase

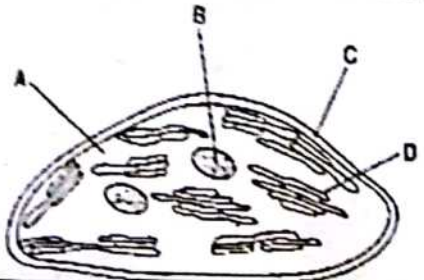
Q.5 **These play vital role in defense activity of macrophages:**
A) Mitochondria
B) Lysozymes
C) Lysosomes
D) Ribosomes

Q.6 **All of the following are not visible during dividing phase in a frog's skin cell except:**
A) Chromosomes
B) Nucleolus
C) Nucleus
D) Chromatin

Q.7 **Damage to one of the following immediately kills the cell whether its prokaryotic or eukaryotic:**
A) Mitochondria
B) Cell wall
C) Cell membrane
D) Golgi apparatus

Q.8 **The invagination of plasma membrane leads to formation of:**
A) Mitochondria
B) Golgi body
C) Phagosome
D) Ribosomes

Q.9 **The diagram shows a chloroplast.**
Which region is involved in the reduction of CO_2?



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Q.10	**Which of these is not a part of murein?** A) Polysaccharides C) Glycans B) Amino acid chains D) Proteins	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**Bacterial chromosome is composed of:** A) DNA only C) DNA and histone proteins B) Proteins only D) RNA and histone proteins	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**Movement of sodium ions across axon membrane via sodium potassium pump is through:** A) Active transport C) Diffusion B) Passive transport D) Osmosis	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**Which one always passes through nuclear membrane from nucleoplasm to cytoplasm?** A) Proteins C) DNA nucleotides B) Enzymes D) RNAs	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**Connection between nucleoplasm and cytoplasm is:** A) Nuclear envelope C) Nuclear pore B) Nuclear membrane D) Nucleolus	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**Cytoplasmic streaming movement causes flow of all except:** A) Endoplasmic reticulum C) Lysosomes B) Mitochondria D) Glucose and salts	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**They help to detoxify the harmful drugs:** A) Ribosomes C) SER B) RER D) Golgi bodies	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**In Golgi apparatus, cisternae are thought to be moving from ____ to _____ face:** A) Inner, outer C) Medial, lateral B) Concave, convex D) Convex, concave	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**It is mismatched with reference to mitochondrial membrane:** A) Outer membrane- Smooth B) Outer membrane -- Chemiosmosis C) Inner membrane - F_1 particles D) Inner membrane - Increasing surface area	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**In cross-section, each centriole consists of a cylindrical array of:** A) 3 microtubule triplets C) 6 microtubule triplets B) 9 microtubule triplets D) 12 microtubule triplets	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Cell secretions are actually produced at _____, then transported to outside through _____ and then _____** A) Ribosomes, RER, SER B) Ribosomes, Golgi apparatus, SER C) RER, Golgi apparatus, Lysosomes D) Ribosomes, ER, Golgi apparatus	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**Which of these is not a part of ribosome?** A) rDNA C) Ribosomal proteins B) rRNA D) Nucleic Acid	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**The attachment of two ribosomal subunits is controlled by:** A) Na^+ ions C) Mg^{++} ions B) Ca^{++} ions D) Cl^- ions	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.23	**Type of ribosomes present in the cytosol and organelles of the eukaryotic cell are respectively:** A) 60S and 40S C) 80S and 70S B) 70S and 80S D) 80S and 80S	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Which of the following cell types would you expect to be abundant with endoplasmic reticulum and Golgi bodies?** **I. Plasma B cells (produce antibodies)** **II. Adipose cells (store fats)** **III. Islet of Langerhans cells (secrete insulin)** **IV. Red blood cells (transport oxygen)** A) I & II only C) I & III only B) III & IV only D) II & III only	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**It serves as pathway for various chemical reactions of a cell:** A) Plasma membrane C) Cytoplasm B) Mitochondrion D) Nucleus	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Which of the following correctly orders the cellular components by size from largest to smallest?** A) Nucleus, protein, ribosome, amino acid B) Nucleus, ribosome, protein, amino acid C) Protein, nucleus, amino acid ribosome D) Amino acid, protein, ribosome, nucleus	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**Lysosomes can be found in all of the following cells except?** A) Muscle cells C) Neutrophils B) Mesophyll cells D) Macrophages	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Glyoxysomes in lipid rich seeds of plants are the sites of breakdown of fatty acids to:** A) Trioses C) Succinate B) Citrate D) Amino acids	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Which of the following is not true about autophagosomes?** A) Digest old parts of a cell B) Also called as secondary lysosomes C) Phagocytose bacteria D) Recycling of cellular components	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which of the following organelles in white blood cells is responsible for their amoeboid movement?** A) Cytoskeleton C) Lysosomes B) Bi-lobed nucleus D) Golgi apparatus	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT– 2

UHS Topic – 2
F.Sc: Chapter # 2 & 3

Biological Molecules
MCQs: 10

LEARNING OUTCOMES

- Properties and Significance of Water ☐
- Definition of; Monomer, Polymer and Macromolecule ☐

1. CARBOHYDRATES

- Occurrence and Sources ☐
- General Formula ☐
- Classification ☐

MONOSACCHARIDES

- Classification ☐
- Structure ☐
- Ring Formation ☐
- Examples ☐

OLIGOSACCHARIDES

- Classification ☐
- Glycosidic Bond ☐
- Examples ☐
- Reducing and Non-Reducing Sugars ☐

POLYSACCHARIDES

- Occurance ☐
- Examples ☐

2. PROTEINS

- General Formula and Types of Amino Acids ☐
- Peptide Bond ☐
- Structural Levels of Proteins ☐
- Classification ☐

3. LIPIDS

ACYLGLYCEROLS

- Composition ☐
- Ester Bond ☐
- Classification of Fatty Acids ☐ ☐ ☐ ☐ ☐ ☐

WAXES

- Composition ☐
- Functional Role ☐

PHOSPHOLIPIDS

- Structure ☐
- Composition of a Phospholipid ☐
- Structural Role ☐

TERPENOIDS

- Composition ☐
- Structural Role ☐

4. NUCLEIC ACIDS

DNA

- Components of DNA ☐
- Structure of DNA ☐
- Phosphodiester Bond ☐
- Chargaff's Rule ☐
- Functions of DNA ☐

RNA

- Components of RNA ☐
- Structure of RNA ☐
- Types of RNA ☐
- Functions of RNA ☐

5. ENZYMES

- Definition and Characteristics ☐
- Co-enzyme, Co-factor, Activator, Prosthetic Group, Apoenzyme and Holoenzyme ☐
- Mechanism of Enzyme Action ☐

EFFECT OF FOLLOWING ON ENZYME CATALYZED REACTION;

- Temperature ☐
- pH ☐
- Enzyme Concentration ☐
- Substrate Concentration ☐

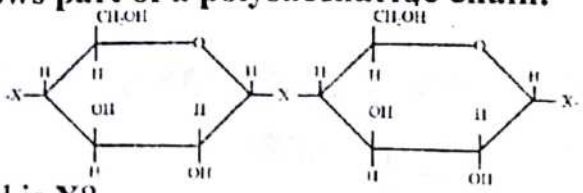
INHIBITORS

- Types of Inhibitors ☐

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KIPS SELF ASSESSMENT TEST

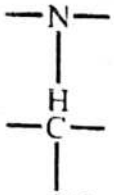
Q.1 **The diagram shows part of a polysaccharide chain:**



What type of bond is **X**?

A) 

B) —O—

C) 

D) OH

Answer: B

Q.2 **These are most abundant organic compounds to be found in cells:**
A) Carbohydrates
B) Proteins
C) Lipids
D) Water

Answer: D

Q.3 **What does a hemoglobin molecule contain?**
A) Four iron (Fe^{2+}) ions attached to each haem group
B) Four oxygen molecules attached to each haem group
C) Four polypeptide chains each with four attached haem groups
D) Four polypeptide chains each with one attached haem group

Answer: D

Q.4 **The specificity of enzymes is due to:**
A) Their high molecular weight
B) Their hydrogen bonding
C) The presence of peptide bond
D) Their active site configuration

Answer: D

Q.5 **Substance on which an enzyme acts is called:**
A) Reactant
B) Substrate
C) Product
D) Inhibitor

Answer: B

Q.6 **All of the following elements are present in all carbohydrates except:**
A) Carbon
B) Oxygen
C) Hydrogen
D) Nitrogen

Answer: D

Q.7 **All are conjugated molecules except:**
A) Glycolipids
B) Lipoproteins
C) Phospholipids
D) Glycoproteins

Answer: C

Q.8 **Reducing and non-reducing sugars are detected by:**
A) Iodine test
B) Millon's test
C) Benedict's test
D) Biuret test

Answer: C

Q.9 **Which term most appropriately describes catalase, collagen and haemoglobin?**
A) Enzymes
B) Fibrous proteins
C) Globular proteins
D) Polypeptides

Answer: C

Q.10 **Which property of proteins enables them to act as pH buffers?**
A) They are soluble
B) They contain carboxyl and amino groups
C) They have a high molecular mass
D) They possess both secondary and tertiary structure

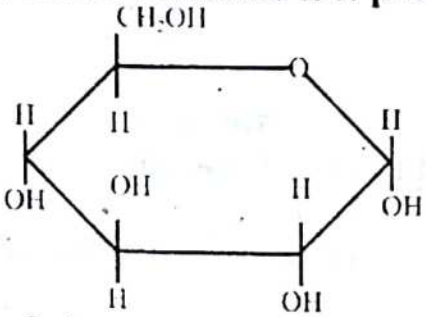
Answer: B

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Q.11 _____ has unbranched chains of glucose and is soluble in hot water:

A) Amylose
B) Amylopectin
C) Glycogen
D) Cellulose

Q.12 The diagram shows a ring structure of glucose. Which form of glucose is shown and in which molecule is it present?



	Form of glucose	Where present
A)	α	Cellulose
B)	α	Starch
C)	β	Cellulose
D)	β	Starch

Q.13 Silk protein is not present in:

A) Silk clothes
B) Silk worms
C) Hair
D) Spider's web

Q.14 Following is not a function of proteins:

A) Transport
B) Metabolism
C) Co-factor
D) Chromosomal movement

Q.15 These are not the products of condensation/dehydration synthesis:

A) Starch
B) NAD
C) Pepsin
D) Glucose

Q.16 All of the following are true about lipids except:

A) They store high amount of energy
B) They play important role in insulation
C) They are polymers of fatty acids
D) They are mostly hydrophobic in nature

Q.17 How many water molecules are released during formation of triglycerides?

A) 1
B) 3
C) 2
D) 4

Q.18 Cuticle is an example of:

A) Acylglycerols
B) Phospholipids
C) Waxes
D) Terpenoids

Q.19 Which of these is not constituent of waxes?

A) Long chain alkanes
B) Aldehydes
C) Alcohols
D) Ketones

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Q.20	**A group of lipids that does not contain fatty acids:** A) Acylglycerols B) Phospholipids C) Waxes D) Terpenoids	(A) (B) (C) ●
Q.21	**All are true about ATP except:** A) Energy currency of cell B) Contains three high energy bonds C) Contains ribose sugar D) Contains three phosphate groups	(A) ● (C) (D)
Q.22	**A DNA fragment contains ACGT nucleotide sequence in one strand. How many hydrogen bonds will it make with other strand?** A) 8 B) 10 C) 12 D) 6	(A) ● (C) (D)
Q.23	**Adenine and guanine are:** A) Main nitrogenous bases of nucleic acids B) Main nitrogenous bases of phospholipids C) Main nitrogenous wastes of humans D) Main types of amino acids in proteins	● (B) (C) (D)
Q.24	**Secondary structure of DNA duplex is maintained by:** A) Phosphodiester linkage B) Ionic bond C) Hydrogen bond D) Hyperphobic interaction	(A) (B) ● (D)
Q.25	**The compound formed by the combination of DNA with basic protein is:** A) Nucleoside B) Nucleosome C) Nucleotide D) Polynucleotide	(A) ● (C) (D)
Q.26	**Experiments of Frederick Griffith were based on_____ phenomenon:** A) Transfection B) Transduction C) Conjugation D) Transformation	(A) (B) (C) (D)
Q.27	**3′ of nucleic acid has always a _____ free group:** A) Phosphate B) Hydroxyl C) Carboxylic D) Amino	(A) ● (C) (D)
Q.28	**This is not true about DNA molecule:** A) Double polymer B) Secondary structure C) One groove in each turn D) Constant diameter	(A) ● (C) (D)
Q.29	**The specific heat capacity of water is 1:** A) Celcius B) Calorie C) Kilocalories D) Joule	(A) ● (C) (D)
Q.30	**Which of the following cells of our body has maximum percentage of water in it?** A) Muscle cells B) Fat cells(adipose tissue) C) Bone cells D) Brain cells	(A) (B) (C) ●

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KIPS UNIT– 3

UHS Topic – 3 & 4
F.Sc: Chapter # 5,6,8 & 10

Microbiology, Kingdom Animalia
MCQs: 10

LEARNING OUTCOMES

1. VIRUSES

- Discovery and Structure of Viruses ☐
- Viral Diseases in Humans ☐

SIGNS, SYMPTOMS, CAUSATIVE AGENT AND CURE OF;

(i) Hepatitis ☐
(ii) Measles and Mumps ☐
(iii) Polio ☐
(iv) Herpes ☐
- Retroviruses ☐
- AIDS ☐
- Lytic and Lysogenic Cycle of Bacteriophage ☐

2. BACTERIA

- Structure and Shape of Bacteria ☐
- Gram Positive and Gram Negative Bacteria ☐
- Nutrition ☐
- Reproduction ☐
- Control of Bacteria ☐

3. FUNGI

- Definition ☐
- Life Cycle of Rhizopus ☐
- Useful and Harmful Aspects of Fungi ☐
- Structure ☐
- Reproduction ☐

4. KINGDOM ANIMALIA

- Coelomates, Acoelomates, Pseudocoelomates ☐
- Radiata, Bilateria ☐

MEDICAL IMPORTANCE OF FOLLOWING PHYLA;

- Platyhelminthes ☐
(i) *Taenia solium* ☐
(ii) *Fasciola hepatica* ☐
- Aschelminthes ☐
(i) *Ascaris lumbricoides* ☐
(ii) *Enterobius vermicularis* ☐
(iii) *Ancylostoma duodenale* ☐
- Annelida ☐
(i) *Hirudo medicinalis* ☐
- Arthropoda ☐
(i) Mosquito ☐
(ii) Lice ☐
(iii) Tse-tse Fly ☐
(iv) Common Housefly ☐
- Mollusca ☐
(i) Snail ☐

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KIPS SELF ASSESSMENT TEST

Q.1 **Bacteria may become immune to viral attack by a process:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Multiplication
B) Lysogeny
C) Lysis
D) Induction

Q.2 **In which step of life cycle of bacteriophage, tail releases enzyme lysozyme?** Ⓐ Ⓑ Ⓒ Ⓓ

A) Attachment
B) Penetration
C) Adsorption
D) Injection

Q.3 **Bacteriophage is an example of:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Obligate intracellular parasite
B) Facultative intracellular parasite
C) Obligate ectoparasite
D) Facultative endoparasite

Q.4 **Lysozyme is used to dissolve:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Viral capsid
B) Bacterial cell wall
C) Bacterial cell membrane
D) Bacterial envelope

Q.5 **It is an RNA non-enveloped virus:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Poliovirus
B) Influenza virus
C) Pox virus
D) Herpes virus

Q.6 **Which of the following viral disease has almost been eradicated from world?** Ⓐ Ⓑ Ⓒ Ⓓ

A) Chicken pox
B) Small pox
C) Mumps
D) Polio

Q.7 **Genetic recombination is not a characteristic of:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Conjugation
B) Transformation
C) Binary fission
D) Transduction

Q.8 **Which of the following is common waste material in bacteria?** Ⓐ Ⓑ Ⓒ Ⓓ

A) Acetic acid
B) Glycogen
C) Sulphur
D) Phosphate

Q.9 **Unifying character of all bacteria:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Peptidoglycan
B) Haploid
C) Conjugation
D) Capsule

Q.10 **First antibiotic was obtained from:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Sac fungi
B) Club fungi
C) Imperfect fungi
D) Conjugating fungi

Q.11 **Lichens are not used in/for:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Textile industry
B) Bio-remediation
C) Food for reindeers
D) Fermentation

Q.12 **Most of the superficial fungal infections are caused by:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Ascomycetes
B) Basidiomycetes
C) Zygomycetes
D) Deuteromycetes

Q.13 **_____ is a poisonous mushroom whose gills glow in dark:** Ⓐ Ⓑ Ⓒ Ⓓ

A) Jack-O'lantern
B) Death cap
C) *Amanita*
D) Toadstools

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Q.14	**Causative agent for nervous spasm, convulsions and psychotic delusions is** A) *Neurospora* B) *Aspergillus fumigatus* C) *Clavi ceps purpurea* D) *Ustil igo maydis*	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**Which of the following are important decomposers of wood?** A) Sac fungi B) Club fungi C) Bracket/shelf fungi D) Conjugating fungi	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Which of the following point supports the evolution of sponges from choanoflagellates?** A) Presence of gelatinous mesenchyme B) Presence of collar cells C) Presence of neurons D) Being protandrous	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Colonial corals secrete $CaCO_3$ from:** A) Cnidocytes B) Nematocysts C) Epidermal cells D) Endodermal cells	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**The difference between mesenchyme of sea anemone and planaria is:** A) Both are non cellular B) Mesenchyme of sea anemone is non cellular and that of planaria is cellular C) Both are cellular D) Mesenchyme of sea anemone is cellular while planaria has mesoderm	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**In coelenterates most substances are distributed in the body with the help of:** A) Water vascular system B) Circulatory system C) Haemolymph D) Diffusion	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Hydra exists in the form of zooids called:** A) Blastostyle B) Polyp C) Medusae D) Worm	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**When beef which is not properly cooked is consumed by humans, they may become infected by:** A) Hook worm B) Pin worm C) Tape worm D) Round worm	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**Which of the following contain maximum number of intestinal parasites?** A) Platyhelminthes B) Nematodes C) Insects D) Cnidarians	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**The insects which move from country to country and damage standing crops:** A) Mosquitoes B) Bugs C) Fleas D) Locusts	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.24	**When cocci form long chain of cells then arrangement is called:** A) Diplococci C) Sarcina B) Streptococci D) Staphylococci	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**Cytoplasm of bacteria differs from that of a common eukaryotic cell in having:** A) Membranous organelles C) Different type of RNAs B) Freely floating ribosomes D) Gel like consistency as a whole	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Bacterial cell envelope includes all of the following except:** A) Plasma membrane C) Capsule B) Cell wall D) Slime	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**The growth of bacterial cells occurs by:** A) Conjugation C) Budding B) Binary fission D) Multiple fission	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Which of the following chemicals will be used to clean a gunshot wound in order to prevent the infection:** A) Alcohol C) Hydrogen peroxide B) Halogens D) Phenols	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Which of the following statement is true about first vaccination by Edward Jenner?** A) He used cowpox virus to cure small pox B) He used small pox virus to cure small pox C) He used small pox virus to cure cowpox D) He used cow pox virus to cure cowpox	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which of the following are the common means of reproduction in fungi?** A) Spores C) Budding B) Conidia D) Fragmentation	Ⓐ Ⓑ Ⓒ Ⓓ

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LEARNING OUTCOMES

DIGESTIVE SYSTEM

- Anatomy

1. DIGESTION IN ORAL CAVITY

- Teeth
- Salivary Glands
- Tongue
- Saliva
- Enzymes
- Pharynx
- Swallowing
- Oesophagus
- Peristalsis and Anti-Peristalsis

2. STOMACH

- Mechanical Digestion(Churning)
- Chemical Digestion
- Gastric Glands
- Enzymes

3. SMALL INTESTINE

- Digestion in Duodenum
- Bile & Emulsification
- Pancreatic Juice
- Jejunum & Ileum
- Enzymes Produced by Intestine Wall
- Absorption of Food

4. LARGE INTESTINE

- Ceacum and Appendix
- Colon
- Absorption of Water and Salts
- Synthesis of Vitamin K
- Rectum
- Defecation Reflex

5. DISORDERS CAUSES, SYMPTOMS, COMPLICATIONS AND PREVENTION OF;

- Obesity
- Anorexia Nervosa

RESPIRATORY SYSTEM

1. ANATOMY OF RESPIRATORY SYSTEM

- Air Passage Ways
- Lungs
- Cartilage
- Cilia
- Goblet Cells
- Breathing
- Inspiration and Expiration
- Transport of Oxygen
- Transport of Carbon Dioxide
- Respiratory Pigments
- Haemoglobin
- Myoglobin

2. CAUSES AND SYMPTOMS OF FOLLOWING RESPIRATORY DISORDERS

- Tuberculosis
- Emphysema
- Lung Cancer

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KIPS SELF ASSESSMENT TEST

Q.1	**Which of the following is not a part of digestive system of humans?** A) Liver B) Spleen C) Salivary glands D) Colon	(A) (B) (C) (D)
Q.2	**Pick an option showing all sites of digestion in human digestive system:** A) Oral cavity, stomach, small intestine B) Oral cavity, ileum, stomach C) Stomach, duodenum, jejunum D) Stomach, small intestine, colon	(A) (B) (C) (D)
Q.3	**Cardiac sphincter prevents transfer of food from:** A) Pharynx to trachea B) Stomach to oesophagus C) Oesophagus to stomach D) Duodenum to stomach	(A) (B) (C) (D)
Q.4	**Stimulation of the parasympathetic nervous system increases:** A) Peristalsis B) Heart rate C) Rate of blood flow D) Breathing rate	(A) (B) (C) (D)
Q.5	**It represents exact location of stomach in our body:** A) Right side of abdomen B) Left side of abdomen C) Right side of thorax D) Left side of thorax	(A) (B) (C) (D)
Q.6	**Where is protein digestion completed?** A) Stomach B) Ileum C) Rectum D) Duodenum	(A) (B) (C) (D)
Q.7	**Defecation reflex can be consciously inhibited by:** A) Outer anal sphincter B) Inner anal sphincter C) Both outer and inner anal sphincters D) Cannot be inhibited	(A) (B) (C) (D)
Q.8	**The movement of digested products and water across the GI tract epithelium and into the underlying blood and lymphatic vessels is called:** A) Ingestion B) Digestion C) Assimilation D) Absorption	(A) (B) (C) (D)
Q.9	**Maximum absorption of food occurs in:** A) Buccal cavity B) Jejunum C) Duodenum D) Ileum	(A) (B) (C) (D)
Q.10	**Chymotrypsin acts on:** A) Proteins in duodenum in alkaline medium B) Starch in duodenum in alkaline medium C) Proteins in stomach in acidic medium D) Proteins in duodenum in acidic medium	(A) (B) (C) (D)
Q.11	**Digestion can be defined as conversion of:** A) Soluble food into protoplasm B) Starch into maltose C) Non-diffusible food into diffusible D) Large food particles into smaller ones	(A) (B) (C) (D)

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Q.12 Which layer of stomach helps in churning of food?
A) Inner layer
B) Middle layer
C) Outer layer
D) Basal layer

Q.13 Peptidases are secretions of:
A) Small intestine
B) Stomach
C) Liver
D) Oral cavity

Q.14 A large number of bacteria, sloughed off mucosal cells, bile pigments and cholesterol represents:
A) Bile
B) Feces
C) Chyle
D) Chyme

Q.15 Air passage way in humans starts from nostrils and ultimately ends in:
A) Bronchioles
B) Basement membrane
C) Alveolar duct
D) Alveolar sac

Q.16 These move passively during inspiration in humans:
A) Ribs and intercostals
B) Diaphragm and lungs
C) Diaphragm and intercostals
D) Lungs and ribs

Q.17 It is the ventral most structure in neck:
A) Oesophagus
B) Spinal cord
C) Trachea
D) Vertebral column

Q.18 The amount of CO_2 carried by venous blood is:
A) 50ml/100ml
B) 54ml/100ml
C) 46ml/100ml
D) 4ml/100ml

Q.19 The pharynx is a muscular passage lined with:
A) Ciliated epithelium
B) Mucous membrane
C) Hair
D) Surfactant

Q.20 It is common for digestive system and respiratory system:
A) Nostrils
B) Nasal cavities
C) Pharynx
D) Buccal cavity

Q.21 It enters into lung:
A) Trachea
B) Esophagus
C) Primary bronchus
D) Secondary bronchus

Q.22 Vacuum is created inside lungs when:
A) Intercostal muscles contract
B) Diaphragm relaxes
C) Surfactant is less in amount
D) Lungs are pressed

Q.23 Oxyhaemoglobin will dissociate when:
A) PO_2 will be less than 115 mmHg
B) Temperature will be less than 37 C^0
C) Carbonic anhydrase will be inhibited
D) pH of blood will be lowered

Q.24 Concentration of which gas is always less in expiratory air as compared to other gases:
A) CO_2
B) O_2
C) N_2
D) CO

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Q.25	**Part of haemoglobin involved in transport of carbon dioxide is:** A) Haeme portion C) Carboxyl group B) Amino group D) R group	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**It has the highest affinity to bind with haeme portion of haemoglobin:** A) CO_2 C) N_2 B) CO D) O_2	Ⓐ Ⓑ Ⓒ Ⓓ B
Q.27	**The total inside capacity of the lungs in humans is:** A) 0.5 liters C) 1.5 liters B) 5 liters D) 2.5 liters	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Which of the following structure contains cartilaginous plates:** A) Primary bronchi C) Trache B) Secondary bronchi D) Bronchioles	Ⓐ Ⓑ Ⓒ Ⓓ B
Q.29	**Which of the following is not related to anorexia?** A) Onset after puberty B) Overeating followed by vomiting C) Psychological disorder D) Underweight patient	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**All of the following are likely to occur in an obese patient except?** A) Hypercholesterolemia C) Hyperthyroidism B) Hypertension D) Hyperglycemia	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 5

UHS Topic – 5c & 5d
F.Sc: Chapter # 14 &15

Transportation, Homeostasis
MCQs: 4+5

LEARNING OUTCOMES

TRANSPORTATION

1. STRUCTURE OF HEART

- Wall of Heart
- Left and Right Chambers of Heart
- SA Node and AV Node.
- Phases of Cardiac Cycle
- ECG
- Blood Pressure
- Structure of Blood Vessels
  - (i) Arteries
  - (ii) Veins
  - (iii) Capillaries
- Atherosclerosis

2. BLOOD

- Plasma and its Composition
- Blood Cells
- Red Blood Cells
  - (i) Number
  - (ii) Site of Production
  - (iii) Life Span
  - (iv) Functions
- White Blood Cells
  - (i) Classification
  - (ii) Number
  - (iii) Site of Production
  - (iv) Life Span
  - (v) Functions
- Platelets
  - (i) Number
  - (ii) Site of Production
  - (iii) Functions

3. CIRCULATORY DISORDERS SYMPTOMS AND CAUSES OF;

- Thrombosis
- Embolism
- Myocardial Infarction
- Cerebral Infarction

4. COMPONENTS OF LYMPHATIC SYSTEM

- Lymph
- Lymph Vessels
- Lymph Nodes

HOMEOSTASIS

- What is Homeostasis?
- Internal and External Stimuli
- Receptors
- Central Control
- Effectors
- Negative Feedback

1. STRUCTURE OF KIDNEY

- Shape, Size and Location of Kidney
- Renal Cortex and Medulla
- Pelvis
- Ureters
- Functions of Kidney

2. STRUCTURE AND FUNCTION OF NEPHRON

- Parts of Nephron
- Blood Supply
- Ultrafiltration, Reabsorption and Formation of Urine
- Osmoregulation by Kidney
- Thermoregulation
- Kidney Problems
  - (i) Kidney Stones
  - (ii) Renal Failure

3. CURES

- Lithotripsy
- Peritoneal Dialysis
- Hemodialysis
- Kidney Transplant

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KIPS SELF ASSESSMENT TEST

Q.1 The mechanism an organism has adapted to eliminate harmful nitrogenous wastes depends upon availability of:
A) Water C) Energy
B) Glucose D) Nutrients
(A) (B) (C) (D)

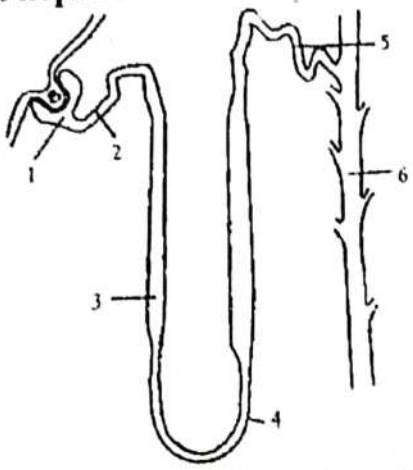
Q.2 It is central requirement for survival of all organisms:
A) Reproduction C) Homeostasis
B) Photosynthesis D) Locomotion
(A) (B) (C) (D)

Q.3 Which of the following has main role in homeostasis of body temperature?
A) Kidneys C) Lungs
B) Skin D) Bones
(A) (B) (C) (D)

Q.4 It is completely reabsorbed at the level of PCT:
A) Glucose C) Water
B) Salts D) Urea
(A) (B) (C) (D)

Q.5 Four metabolic processes are listed below:
1- Synthesis of plasma proteins
2- Regulation of fat metabolism
3- Storage of vitamin A
4- Manufacturing of digestive enzymes
Which of these are functions of the liver?
A) 1, 2 and 3 only C) 1, 3 and 4 only
B) 1, 3 and 4 only D) 2, 3 and 4 only
(A) (B) (C) (D)

Q.6 The diagram represents a nephron:



Where does antidiuretic hormone (ADH) affect the permeability of membranes to water?
A) 1 and 2 C) 3 and 4
B) 2 and 3 D) 5 and 6
(A) (B) (C) (D)

Q.7 Podocytes are cells found in:
A) Glomerulus C) PCT
B) Bowman's capsule D) DCT
(A) (B) (C) (D)

Q.8 Which cannot be the cause of kidney stone formation?
A) Hyperuricemia C) Hypercalcemia
B) Hyperglycemia D) Hyperparathyroidism
(A) (B) (C) (D)

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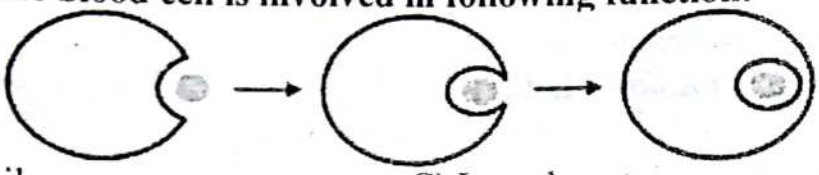
Q.9	**The sequence of key processes involved in formation of urine can be described as:** A) Filtration, secretion and absorption B) Secretion, absorption and filtration C) Filtration, reabsorption and secretion D) Secretion, filtration and absorption	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	**These are not the stones found in kidney:** A) Calcium oxalate B) Calcium phosphate C) Uric acid stones D) Cholesterol stones	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**The ureters of both kidneys drain urine from:** A) Pelvis B) Ureter C) Hilus D) Bladder	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**The functional units of human kidney are:** A) Renal corpuscles B) Ureter C) Nephrons D) Renal pelvis	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**In juxtamedullary nephrons, additional capillaries extend down to form a loop of vessels called:** A) Loop of Henle B) Vasa recta C) Peritubular capillaries D) Glomerulus	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**Renal failure results in increase in plasma level of:** A) Glucose B) Proteins C) Urea D) Glycogen	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**Mechanism by which an artificial kidney removes nitrogenous wastes from blood is:** A) Active transport B) Osmosis C) Diffusion D) Endocytosis	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Amount of blood pumped by heart into body per minute is called:** A) Atrial output B) Ventricular output C) Cardiac output D) Stroke volume	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**At the time of diastole, heart is filled with:** A) Mixed blood B) Venous blood C) Oxygenated blood D) Deoxygenated blood	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Blood passes from left ventricle to right atrium. It is:** A) Systemic circulation B) Pulmonary circulation C) Coronary circulation D) Atriovenous circulation	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**There are _____ different types of WBCs in our blood:** A) 2 B) 4 C) 3 D) 5	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**All of the following types of WBCs can have lobed nucleus except:** A) Neutrophils B) Monocytes C) Eosinophils D) Lymphocytes	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**_____ inactivate inflammation-producing substances and _____ attack parasites:** A) Neutrophils B) Monocytes C) Eosinophils D) Lymphocytes	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.22 **It serves as a temporary seal to prevent bleeding until the damaged tissue can be repaired:**

A) Wound
B) Clot
C) Scar
D) Skin

Q.23 **Which white blood cell is involved in following function:**



A) Basophil
B) Neutrophil
C) Lymphocyte
D) Eosinophil

Q.24 **How many valves are present in human heart?**

A) 4
B) 2
C) 3
D) 6

Q.25 **ECG is a diagnostic test for abnormality in:**

A) Rhythmicity and conduction of heart
B) Blood flow defect in heart
C) Valves movement of heart
D) Conduction and valve defect

Q.26 **If the distance between two P waves on an ECG of a person is more than the normal, what will be the possible duration of his cardiac cycle?**

A) 0.2 second
B) 0.6 second
C) 0.8 second
D) 1 second

Q.27 **Blood can enter in ventricles during all of the following phases of cardiac cycle except:**

A) Ventricular diastole
B) Atrial systole
C) Atrial diastole
D) Ventricular systole

Q.28 **Which of the following is correctly matched?**

	Veins	Capillaries
Blood pressure	Intermediate	Low
Blood flow	Intermdiate	Slow
Pulse	Yes	No
Elasticity	No	No

Q.29 **If an artery supplying blood to brain bursts as a result of high blood pressure, it will lead to:**

A) Hemorrhage
B) Stroke
C) Cerebral infarction
D) Hypertension

Q.30 **All of the following are the functions of blood except:**

A) Leukemia
B) Wound healing
C) Immunity
D) Buffer action

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KIPS UNIT- 6

UHS Topic – 5e & 5f
F.Sc: Chapter # 17 & 18

Nervous System, Reproduction
MCQs: 4+4

LEARNING OUTCOMES

NERVOUS SYSTEM

- Nervous System and its Types
- (i) Diffused Nervous System
- (ii) Central Nervous System

1. CENTRAL NERVOUS SYSTEM

- Structure of Brain
- Meninges
- Ventricles
- Gray and White Matter
- Forebrain
- Midbrain
- Hindbrain
- Spinal Cord
- Peripheral Nervous System
- Cranial and Spinal Nerves
- Autonomic & Somatic Nervous System
- Sympathetic & Parasympathetic Nervous System
- Neurons
- (i) Associative
- (ii) Motor
- (iii) Sensory
- Nerve Impulse
- Synapse
- Neurotransmitters

2. Nervous disorders

- (i) Parkinson's Disease
- (ii) Epilepsy
- (iii) Alzheimer's Disease
- Biological Clock & Circadian Rhythms

REPRODUCTION

3. STRUCTURE AND FUNCTION OF MALE REPRODUCTIVE SYSTEM

- External Genitilia
- Gonads
- Spermatogenesis

4. STRUCTURE AND FUNCTION OF FEMALE REPRODUCTIVE SYSTEM

- External Genitilia
- Gonads
- Oogenesis
- Menstrual Cycle

5. SEXUALLY TRANSMITTED DISEASES (STD'S)

CAUSATIVE AGENTS, SYMPTOMS AND CURE OF;

- (i) Gonorrhea
- (ii) Syphilis
- (iii) AIDS

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KIPS SELF ASSESSMENT TEST

Q.1 **pH of CSF is:**

A) Slightly basic
B) Slightly acidic
C) Highly basic
D) Highly acidic

Q.2 **Hydra has:**

A) No nervous system
B) Diffused nervous system
C) Centralized nervous system
D) Sensory organs

Q.3 **Which part of neuron may act as a receptor as well?**

A) Dendrite
B) Axon
C) Cell body
D) Ganglion

Q.4 **It acts as relay neuron:**

A) Sensory
B) Motor
C) Associative
D) Efferent

Q.5 **All of the following are characteristics of myelinated neurons except:**

A) Saltatory impulse
B) Nodes of Ranvier
C) Increased speed of impulse
D) Increased leakage of impulse

Q.6 **Which of the following structures distinguish neuron cells from other cells?**

A) Mitochondria & Nucleus
B) Flagellum & Medullary sheath
C) Dendrite & Axon
D) Vacuoles & Fibres

Q.7 **Which of the following is not the part of forebrain?**

A) Pituitary
B) Hippocampus
C) Amygdala
D) Thalamus

Q.8 **_____receives and processes sensory information, initiates responses, stores memories, generates thoughts and emotions:**

A) Nerves
B) Brain
C) Spinal cord
D) Ganglia

Q.9 **The sensory information to the limbic system and cerebrum is carried through:**

A) Thalamus
B) Hypothalamus
C) Pons
D) Cerebellum

Q.10 **How many layers of meninges protect brain?**

A) 1
B) 2
C) 3
D) 4

Q.11 **In comparison of sympathetic and parasympathetic nervous system, which one of the following feature is correctly described:**

	Sympathetic	Parasympathetic
A) Salivary Glands:	Stimulates secretion	Inhibits secretion
B) Pupil of the eye:	Dilates	Constricts
C) Heart Rate:	Decreases	Increases
D) Intestinal Peristalsis:	Stimulates	Inhibits

Q.12 **During which of the following disease, loss of memory occurs:**

A) Alzheimer's disease
B) Parkinson's disease
C) Dwarfism
D) Diabetes mellitus

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Q.13 **Motor neurons carry nerve impulse from _____ to _____:**
A) Effectors, CNS
B) CNS, Receptors
C) Receptors, CNS
D) CNS, Effectors

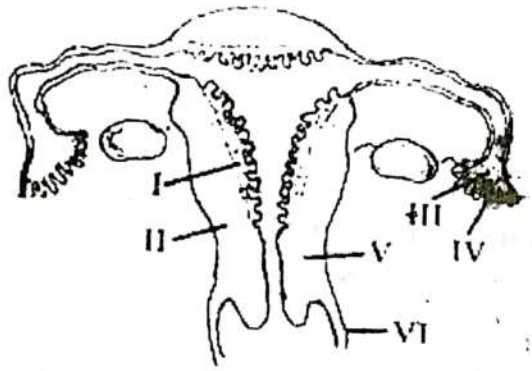
Q.14 **Net charge across neurolemma at rest is:**
A) –ve outside, +ve inside
B) -ve inside, +ve outside
C) Neutral on both sides
D) Different according to cell type

Q.15 **Repolarization is due to:**
A) Influx of Na^+
B) Efflux of K^+
C) Influx of K^+
D) Efflux of Na^+

Q.16 **Sertoli cells are under control of:**
A) LH
B) ICSH
C) FSH
D) Testosterone

Q.17 **In a menstrual cycle of 24 days, which of the following will be day of ovulation?**
A) 14^{th} day
B) 10^{th} day
C) 7^{th} day
D) 6^{th} day

Q.18 **The figure given below depicts a female reproductive system of humans. Which one set of three parts out of I–VI have been correctly identified?**



A) (I) Perimetrium, (II) Myometrium, (III) Fallopian tube
B) (II) Endometrium, (III) Infundibulum, (IV) Fimbriae
C) (II) Myometrium, (III) Fallopian tube, (V) Cervix
D) (IV) Oviduct funnel, (V) Uterus, (VI) Cervix

Q.19 **Sperm production in humans is:**
A) Periodic process
B) Cyclic process
C) Continuous process
D) Discontinuous process

Q.20 **It is the correct passage of sperms from testis to outside:**
A) Seminiferous tubules → Sperm duct → Epididymis → Urethra
B) Sperm duct → Seminiferous tubule → Epididymis → Urethra
C) Epididymis → Seminiferous tubule → Sperm duct → Urethra
D) Seminiferous tubules → Epididymis → Sperm duct → Urethra

Q.21 **Epididymis is:**
A) Distal part of vas deferens
B) Proximal part of vas deferens
C) Proximal part of oviduct
D) Distal part of oviduct

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Q.22	**Primary spermatocytes are formed from spermatogonia through:** A) Mitosis B) Meiosis I C) Meiosis II D) Differentiation	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**During conversion of primary spermatocyte to secondary spermatocyte:** A) Amount of DNA reduces to half B) Number of chromosomes reduces to half C) Both DNA and chromosomes reduce to half D) No reduction in genetic material	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Pick an incorrectly matched pair regarding males:** A) Epididymis – sperms storage B) Urethra – carries urine only C) Scrotum – thermoregulation D) Testes – testosterone production	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**Oviduct in females opens into:** A) Fallopian tube B) Ovary C) Uterus D) Cervix	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**The oocyte released during ovulation is in:** A) Anaphase I B) Prophase I C) Metaphase I D) Metaphase II	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**Peak level of LH corresponds with:** A) Oogenesis B) Ovulation C) Fertilization D) Menstruation	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**The end or complete stop of the menstrual cycle is called:** A) Oestrus B) Menstruation C) Menopause D) Menarche	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Release of FSH and development of primary follicles starts:** A) During foetal development B) Before birth C) Right after birth D) At puberty	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Follicular atresia is the degeneration of:** A) Primary oocyte B) Primary follicles C) 1st polar body D) 2nd polar body	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 7

UHS Topic – 5g, 5h & 5i
F.Sc: Chapter # 16, 17 & 14

Support and Movement, Hormonal Control & Immunity
MCQs: 5+4+3

LEARNING OUTCOMES

HUMAN SKELETON SYSTEM
- Bone and Cartilage
- Tendons and Ligaments
- Axial and Appendicular Skeleton
- Joints
  - (i) Fibrous
  - (ii) Cartilaginous
  - (iii) Synovial
  - (iv) Pivot
  - (v) Multistage

MUSCULAR SYSTEM
DIFFERENCE BETWEEN;
- Smooth, Cardiac and Skeletal Muscles
- Structure and Function of Skeletal Muscles
- Sliding Filament Model
- Energy for Muscle Contraction

CAUSES OF;
- Muscle Fatigue, Tetany and Cramp

HORMONAL CONTROL
- Composition of Hormones

HORMONES OF FOLLOWING GLANDS AND RELATED ABNORMALITIES;
- Hypothalamus
- Anterior Pituitary
  - (i) Somatotrophin
  - (ii) Thyroid Stimulating Hormone
  - (iii) Adrenocorticotropic Hormone
  - (iv) Gonadotrophins (FSH, LH, LTH, Prolactin)
- Posterior Pituitary
  - (i) Vasopressin
  - (ii) Oxytocin
- Thyroid
  - (i) T3
  - (ii) T4
  - (iii) Calcitonin
- Parathyroid
  - (i) Parathormone
- Adrenal Cortex
  - (i) Cortisol
  - (ii) Corticosterone
  - (iii) Aldosterone
  - (iv) Androgens
- Adrenal Medulla
  - (i) Adrenaline
  - (ii) Nor Adrenaline
- Islets of Langerhans
  - (i) Insulin
  - (ii) Glucagon
- Alimentary Canal
  - (i) Gastrin
  - (ii) Secretion
- Ovaries
  - (i) Oestrogen
  - (ii) Progesterone
- Testes
  - (i) Testosterone

DISORDERS
- Diabetes Mellitus
- Diabetes Insipidus
- Goiter
- Dwarfism
- Gigantism

IMMUNITY
- Definition
- Antigen
- Structure of Antibody
- Lymphocytes
  - (i) T-lymphocytes
  - (ii) B-lymphocytes
- Cell Mediated Response
- Humoral Response
- Innate Immunity
- Acquired Immunity
- Active Immunity
- Passive Immunity
- Vaccination

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KIPS SELF ASSESSMENT TEST

Q.1	**Bones protect critical internal organs like:** A) Brain, spinal cord, heart B) Heart, stomach, eyes C) Brain, all nerves, spinal cord D) Spinal cord, pinna of ears, lungs	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	**A statement not true about bones and cartilages:** A) Both contain living cells B) Both have ground matrix of collagen C) Both contains various types of living cells D) Both are part of endoskeleton	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	**Total number of "Free Ribs" in human body is:** A) 1 B) 2 C) 4 D) 8	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	**Knee joint and elbow joint are example of:** A) Ball and socket joint B) Hinge joint C) Cartilaginous joint D) Fibrous joint	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	**Visceral muscles are also called as smooth muscles because they:** A) Don't contain muscle proteins B) Don't have striations C) Don't have multiple nuclei D) Help in peristalsis	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	**Cross bridges are part of:** A) Actin B) Tropomyosin C) Troponin D) Myosin	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	**Regarding skeletal muscle structure, the area which contains only thick filaments:** A) A band B) H-zone C) I band D) Z line	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	**For muscle contraction, calcium ions in sarcoplasm are released from:** A) T tubule B) Sarcoplasmic reticulum C) Mitochondria D) Myosin filament	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	**Complete immobilization of muscle leads to:** A) Muscle atrophy B) Muscle hypertrophy C) Muscle hyperplasia D) Muscle tetany	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	**Which of the following is not a function of bone?** A) Organ protection B) Protection from heat loss C) Muscle attachment D) Calcium metabolism	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**Pineal gland is located in/at:** A) Spinal canal B) Neck C) Brain D) Stomach mucosa	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**Stimulation of estrogen secretion is the function of:** A) FSH Only B) LH Only C) FSH, LH D) FSH, Progesterone	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**During diabetes insipidus, body fluids become:** A) Hypotonic B) Isotonic C) Hypertonic D) Isosmotic	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.14	**High levels of TSH can be seen in blood during all conditions except:** A) Periods of growth and development B) Low level of thyroxin in blood C) Low body temperature D) High level of iodine in body	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**Iodine is required for synthesis of:** A) All hormones secreted from thyroid B) T_3 and T_4 C) Thyroxin and calcitonin D) TSH, T_3 and T_4	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Alpha (α) cells of Islets of Langerhans secrete hormone called:** A) Glucocorticoid B) Insulin C) Glucagon D) Aldosterone	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Islets of Langerhans respond directly to:** A) Blood glucose level B) STH C) ACTH D) Adrenalin	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Glucagon increases blood glucose level by all means except:** A) Converting glycogen to glucose B) Converting fats to glucose C) Increasing hydrolysis of glycogen D) Increasing glycolysis	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**High blood sugar level is characteristic feature of which of the following disease:** A) Addison's disease B) Hypoglycemia C) Cushing's disease D) Diabetes insipidus	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**All of the following are true about antibodies except:** A) They are proteins B) They can act as antitoxins C) Produced by B cells D) They are nonspecific in action	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**All of these are functions of antibodies except:** A) Phagocytosis B) Neutralize toxins C) Form antitoxins D) Attachment with bacteria	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**Antibodies are proteins used to destroy foreign particles, produced in:** A) All animals B) All vertebrates C) All mammals D) Only in humans	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**Which part of antibody recognizes the antigen during immune response?** A) Heavy part B) Variable part C) Light part D) Constant part	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**If our immune system starts destroying the cells of our body, then this type of immune response will specifically be called:** A) Natural immune B) Auto immune C) Artificial immune D) Cell mediated	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.25	**Which of these is not true regarding Bursa of Fabricius?** A) It produces B cells in humans C) It is a lymphoid structure B) B cells were discovered from it D) B cells get mature in it	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Body produces ____, _____ against bacteria and viruses respectively:** A) Immunogens, immunoglobulins C) Immunoglobulins, interferons B) Immunoglobulins, Immunogens D) Immunogens, interferons	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**Which type of cartilage is/are present in our respiratory passage?** A) Fibro cartilage C) Elastic cartilage B) Hyaline cartilage D) Both B and C	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**All of the following are true about collagen except:** A) Inelastic C) Flexible B) Nonliving D) Protein	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Which of the following is an example of synovial joint:** A) Joint between clavicle and scapula B) Joint between rib and vertebral column C) Joint between radius and ulna D) Joints between skull bones	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**The joint present between the bones of forearm and wrist is called as:** A) Pivot joint C) Multistage joint B) Ball and socket joint D) Hinge joint	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 8

UHS Topic – 6 & 8
F.Sc: Chapter # 11, 25 & 27

Bioenergetics, Ecosystem
MCQs: 6+2

LEARNING OUTCOMES

BIOENERGETICS

1. PHOTOSYNTHESIS

- Photosynthetic Pigments ☐
- Absorption Spectrum ☐
- Action Spectrum ☐
- Light Reactions ☐

(i) Photosystems ☐

(ii) Non Cyclic Photophosphorylation ☐

(iii) Cyclic Photophosphorylation ☐

(iv) Chemiosmosis ☐

- Dark Reactions ☐

(i) Calvin Cycle ☐

2. RESPIRATION

- Aerobic Respiration ☐
- Anaerobic Respiration ☐
- Glycolysis ☐
- Krebs' Cycle ☐
- Respiratory Chain ☐
- Total ATP Formation ☐

ECOSYSTEM

- Components of Ecosystem ☐
- Succession ☐
- Stages of Succession ☐

HUMAN IMPACT ON ECOSYSTEM

- Population ☐
- Deforestation ☐
- Ozone Depletion ☐
- Green House Effect ☐
- Acid Rain ☐
- Eutrophication ☐
- Nitrogen Cycle ☐

(i) Ammonification ☐

(ii) Nitrification ☐

(iii) Assimilation ☐

- Pesticides ☐

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Q.1 Which of the following d...es c...ions in a photosynthesizing cell, exposed to high l...t intensity and low carbon dioxide concentration? (A) (B) (C) (D)

	Concentration of CO_2 acceptor	Concentration of ATP	Concentration of GP (PGA)
A)	High	High	Low
B)	High	Low	Low
C)	Low	High	High
D)	Low	Low	High

Q.2 Z-scheme is another name ...ed for: (A) (B) (C) (D)
A) Cyclic photophosphorylation
B) Non-cyclic photophosphorylation
C) Calvin cycle
D) Oxidative phosphorylation

Q.3 Photosystem II has reaction center of: (A) (B) (C) (D)
A) P_{680}
B) P_{730}
C) P_{700}
D) P_{660}

Q.4 Which of the following is a molecule formed in metabolic pathways by the equal splitting of a phosphorylated hexose into two halves? (A) (B) (C) (D)
A) Acetyl coenzyme A
B) Fructose 1, 6-bisphosphate
C) Ribulose bisphosphate (RuBP)
D) Triose phosphate

Q.5 What is the function of molecular oxygen in cellular respiration? (A) (B) (C) (D)
A) To cause the breakdown of citric acid
B) To combine with glucose to produce carbon dioxide
C) To combine with carbon from organic molecules to produce carbon dioxide
D) To combine with hydrogen from organic molecules to produce water

Q.6 How many moles of carbon dioxide are produced by the complete oxidation of 1 mole of pyruvate? (A) (B) (C) (D)
A) 1
B) 3
C) 4
D) 6

Q.7 The reaction which occurs in thylakoid interior space: (A) (B) (C) (D)
A) Photolysis
B) Transport of electrons
C) ATP synthesis
D) Dark reaction

Q.8 In photosynthetic prokaryotes which of the following might be absent? (A) (B) (C) (D)
A) Grana
B) Chlorophyll
C) Thylakoid like membranes
D) ATP synthase

Q.9 The wavelengths of light least absorbed by carotenes are: (A) (B) (C) (D)
A) Blue to green
B) Yellow to orange
C) Red to orange
D) Yellow to red

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Q.10	**What will be the number of carbon and hydrogen atoms respectively in the tail of chlorophyll b molecule?** A) 20, 39 C) 20, 40 B) 55, 72 D) 55, 70	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**Which of the following statement is correct if we compare action spectrum with absorption spectrum?** A) Valley is less deep in green region B) Narrower peaks in action spectrum C) Broader valley in action spectrum D) More absorption and less photosynthesis	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**A plant shifts from cyclic to non-cyclic flow when:** A) It has low reducing power C) Assimilating power is restored B) It runs low on assimilating power D) It has sufficient reducing power	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**Photosystem I and II are differentiated on the basis of their:** A) Chlorophyll a C) Chlorophyll b B) Primary electron acceptor D) Carotenoids	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**In which of the following steps NADH is formed without decarboxylation?** A) Isocitrate – α-ketoglutarate C) Pyruvate – Acetyl CoA B) α-ketoglutarate – succinate D) Malate – oxaloacetate	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**The oxidation of which of the following will produce $FADH_2$?** A) Malate C) Fumarate B) FAD D) Succinate	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**The word "Oikos" means:** A) Family member C) Family hierarchy B) Family household D) Family gene pool	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**It is a thin layer of earth in which all living organisms exist:** A) Biome C) Ecosystem B) Habitat D) Biosphere	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Which of the following is not true about niche?** A) Species occupation C) Ultimate distributional unit B) Not related to habitat D) Basic role of organism in community	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Crust on the substratum. This is related with:** A) Crustose lichen C) Fruticose lichen B) Foliose lichen D) Foliage lichen	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**The enzyme provided by heather host to its fungal partner in mycorrhizal association is:** A) Carbohydrate digesting C) Protein digesting B) Fats digesting D) Lipids digesting	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**A hole in earth's protective shield is:** A) Ozone layer depletion C) Global warming B) Green house effect D) Eutrophication	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.22	**If more UV rays reach the earth's surface, they will directly affect life on earth by:** A) Increasing pH of oceans B) Decreasing salinity of water C) Changes in DNA D) Destroying habitat	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**All of the following are causes of greenhouse effect, except:** A) Aforestation B) Over urbanization C) Industrialization D) Population explosion	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Incomplete burning of carbonate and carbon compounds are source of:** A) Chlorofluorocarbons B) Sulphur dioxide C) Lead compounds D) Carbon monoxide	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**Succession involves the process of:** A) Colonization B) Extinction C) Establishment D) All A, B, C	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Ultimate survivors after eutrophication of an aquatic habitat are:** A) Fishes B) Aerobic bacteria C) Anaerobic bacteria D) Fungi	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**A chemical that destroys agricultural competitors is called:** A) Insecticide B) Fungicide C) Herbicide D) Pesticide	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Organisms of same species inhabiting in space and time form a:** A) Population B) Food chain C) Community D) Food web	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**A community of grasses was found growing in already burnt forest area. This represents:** A) Primary succession B) Secondary succession C) Reforestation D) Desertification	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which of the following is not recycled within an ecosystem?** A) Water B) Nitrogen C) Energy D) Carbon	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT-9

UHS Topic – 7, 8 & 9
F.Sc: Chapter # 23 & 24

Biotechnology, Evolution
MCQs: 5+3

LEARNING OUTCOMES

BIOTECHNOLOGY

1. RECOMBINANT DNA TECHNOLOGY

- Gene of Interest ☐
- Restriction Endonuclease ☐
- Vectors ☐
- Expression System ☐

2. PCR

- Requirements ☐
- Method ☐

3. DNA ANALYSIS

- Finger Printing ☐
- Gene Sequencing ☐

4. GENE THERAPY

- Cystic Fibrosis ☐
- SCID ☐
- Hypercholesterolemia ☐

5. TRANSGENIC ORGANISMS

- Transgenic Bacteria ☐
- Transgenic Plants ☐
- Transgenic Animals ☐

6. TISSUE CULTURE

- Techniques ☐
- Advantages ☐

7. CLONING

- Methods ☐
- Application ☐

EVOLUTION

1. DARWIN'S THEORY

- Descent with Modification ☐
- Natural Selection and Adaptation ☐

2. LAMARCK'S THEORY

- Use and Disuse of Organs ☐
- Inheritance of Acquired Characters ☐

3. EVIDENCES OF EVOLUTION

- Paleontology ☐
- Comparative Anatomy ☐
- Molecular Biology ☐
- Biogeography ☐

4. HARDY-WEINBERG THEOREM

- Definition ☐
- Equation ☐

FACTORS AFFECTING GENE / ALLELE FREQUENCY

- Mutation ☐
- Migration ☐
- Genetic Drift ☐
- Non-random Mating ☐
- Selection ☐

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KIPS SELF ASSESSMENT TEST

Q.1 **Origin of life is explained by all except:**
A) Endosymbiont hypothesis
B) Hydrothermal vent hypothesis
C) Creationism
D) Chemical evolution

Q.2 **Scientist who first time presented concept of evolution with evidences:**
A) Aristotle
B) Linnaeus
C) Lamarck
D) Darwin

Q.3 **Darwin believed in perceived unity of life. It means:**
A) All organisms are unicellular
B) All organisms are similar
C) All organisms have common ancestor
D) All organisms have common cells

Q.4 **In different species, analogous organs evolve to adapt:**
A) Same habitat
B) Different habitat
C) Same nutrition
D) Different ecosystem

Q.5 **Which of the following is not a vestigial organ in human body?**
A) Wisdom teeth
B) Appendix
C) Ear muscle
D) Sacrum

Q.6 **According to Lamarck, evolution is cumulative product of:**
A) Somatic changes
B) Genetic changes
C) Heritable variations
D) Natural selection

Q.7 **It correctly represents chronological appearance of vertebrates:**
A) Amphibians, fishes, reptiles, birds, mammals
B) Fishes, amphibians, reptiles, birds, mammals
C) Reptiles, birds, fishes, amphibians, mammals
D) Fishes, amphibians, reptiles, mammals, birds

Q.8 **It is geographical distribution of species:**
A) Zoogeography
B) Biogeography
C) Geology
D) Paleontology

Q.9 **The one who believed in theory of special creation is:**
A) C. Linnaeus
B) Lamarck
C) Mendel
D) Lyell

Q.10 **Darwin wrote:**
A) Note book on origin of species
B) Essay on origin of species
C) Principles of population
D) Both A and B

Q.11 **Which one is not present in *E. coli* naturally?**
A) EcoR1
B) Palindromic sequences
C) Plasmid
D) Gene of insulin

Q.12 **Many identical copies of genes can be produced by:**
A) Gene sequencing
B) Gene expression
C) Gene cloning
D) Gene analysis

Q.13 **Recombinant DNA technology is popularly known as:**
A) Biotechnology
B) Genetic engineering
C) PCR
D) Gene therapy

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Q.14	**Palindromic sequence involves:** A) 4 nucleotides only B) 6 nucleotides only C) 4-6 nucleotides D) 4 or 6 nucleotides	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**This enzyme has no role in recombinant DNA technology:** A) Taq polymerase B) DNA ligase C) Restriction endonuclease D) Reverse transcriptase	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**A method used to get copies of DNA in laboratory other than recombinant DNA technology is:** A) RFLPs B) PCR C) Gene therapy D) Maxam-Gilbert Method	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**These involve ex-vivo gene therapy:** A) Familial hypercholesterolemia & SCID B) SCID & Cystic fibrosis C) Cystic fibrosis & Coronary artery angioplasty D) Hemophilia & Parkinson's disease	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**SCID is due to failure of maturation of:** A) Monocytes B) Leucocytes C) Lymphocytes D) Erythrocytes	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Naturally restriction endonucleases cut:** A) Viral DNA B) Human DNA C) Fungal DNA D) All A, B, C	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Restriction endonuclease does not cut bacterial own DNA because:** A) It is circular B) It is specific C) It is methylated D) Palindromic sequence is not present	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**In PCR, the new complementary strand of DNA is composed of:** A) Deoxyribonucleosides B) Ribonucleotides C) Deoxyribonucleotides D) Ribonucleosides	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**Liposomes are produced when_____ are put into solution:** A) Lipoproteins B) Glycoproteins C) Glycolipids D) Nucleoproteins	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**All of the following are the goals to treat cancer via gene therapy except:** A) Rendering normal cells tolerant to chemotherapy B) Rendering somatic cells tolerant to chemotherapy C) Rendering cancerous cells tolerant to chemotherapy D) Rendering bone stem cells protected	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Central cutting of gene of interest is accomplished by:** A) Endonuclease enzyme B) Exonuclease enzyme C) DNA helicase enzyme D) DNA ligase enzyme	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**Restriction endonuclease cuts the DNA by cleaving:** A) Glycosidic bonds B) Phosphodiester bonds C) Peptide bonds D) H-bonds	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.26 **The specific type of nucleotide molecule used during DNA sequencing in Sanger method is:**

A) Ribonucleoside triphosphate
B) Deoxyribonucleoside triphosphate
C) Dideoxyribonucleoside triphosphate
D) Dideoxyribonucleotide triphosphate

(A) (B) (C) (D)

Q.27 **All are biotechnological products produced by transgenic bacteria except:**

A) Human growth hormone
B) Tissue plasminogen activator
C) Hemophilia factor VIII
D) Hepatitis C vaccine

(A) (B) (C) (D)

Q.28 **Which type of plant had been genetically engineered to produce antibodies that delivered radio isotopes to the tumor cells?**

A) Rice
B) Corn
C) Wheat
D) Potato

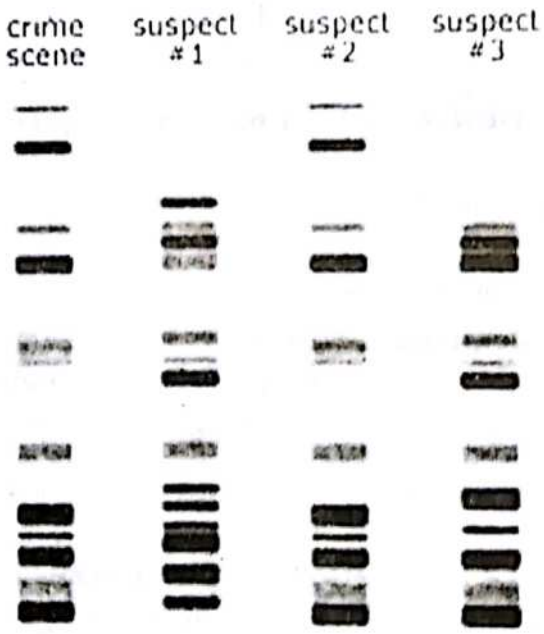
(A) (B) (C) (D)

Q.29 **Quinine, an anti-malarial drug, can be produced by:**

A) *Cinchona ledgeriana*
B) *Digitalis lanata*
C) *Oryza stiva*
D) *Buhenia verigata*

(A) (B) (C) (D)

Q.30 **The DNA fingerprinting autoradiograph of a crime scene has been given below:**



Which of the given suspect might be involved in crime?

A) Suspect # 1
B) Suspect # 2
C) Suspect # 3
D) Both suspect 2 and 3

(A) (B) (C) (D)

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KIPS UNIT- 10

UHS Topic – 10
F.Sc: Chapter # 20,21 & 22

Genetics
MCQs: 8

LEARNING OUTCOMES

1. TERMS
- Gene and Allele
- Locus
- Dominant, Recessive and Co-dominant
- Genotype and Dhenotype
- Homozygous and Heterozygous
- F1 and F2
- Mutation
- Epistasis
- Rh Factor
- Dominance Relations
- Polygenic Inheritance

2. LAW OF SEGREGATION
- Statement
- Monohybrids and Monohybrid Cross
- Punnet Square
- Problem Solving

3. LAW OF INDEPENDENT ASSORTEMENT
- Statement
- Dihybrid and Dihybrid Cross
- Punnet Square
- Problems Solving

4. GENE LINKAGE IN HUMANS
- Linkage Group

5. SEX LINKAGE IN HUMANS
- X-linked Recessive Inheritance
- Haemophilia and its Types
- Color Blindness and its Types

6. DNA REPLICATION
- Models of DNA Replication
- Meselson and Stahl Experiment
- Mechanism of Replication

(i) Site of Replication
(ii) Steps of Replication
(iii) Roles of Enzymes

7. GENE EXPRESSION
- Transcription

(i) Initiation
(ii) Elongation
(iii) Termination
(iv) Modification

- Translation

(i) Initiation
(ii) Elongation
(iii) Termination

8. GENETIC CODE
- Codons
- Properties
- Functions
- Storage Diseases

9. SEX CHROMOSOMES
- Patterns of Sex Determination

(i) XO-XX type
(ii) XY-XX type
(iii) ZZ-ZW type

10. CELL CYCLE
- Phases

(i) G_1 Phase
(ii) G_0 Phase
(iii) S Phase
(iv) G_2 Phase

- Events of Mitosis
- Significance of Mitosis
- Events of Meiosis I and II
- Significance of Meiosis
- Meiotic Errors

(i) Down's Syndrome
(ii) Klinefelter's Syndrome
(iii) Turner's Syndrome

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KIPS SELF ASSESSMENT TEST

Q.1 **Which one of the following phenotypic features of man can be affected by the genotype only?**

A) Intelligence
B) Skin colour
C) Number of fingers
D) Blood group antigens

Q.2 **Red-green colour blindness is a sex-linked recessive condition in Man. A man with normal vision and his colour-blind wife would expect to produce:**

A) Colour-blind sons and daughters with normal vision only
B) Colour-blind sons, colour-blind daughters and daughters with normal vision only
C) Sons with normal vision, colour-blind daughters and daughters with normal vision only
D) Colour-blind sons, sons with normal vision, colour-blind daughters and daughters with normal vision

Q.3 **All the alleles present in the gametes of a sexually reproducing population are known as the population's:**

A) Gene frequency
B) Gene pool
C) Genome
D) Genotype

Q.4 **An interaction between two alleles having single locus for a single trait can be labeled as:**

A) Pleiotropy
B) Epistasis
C) Dominance
D) Polygene

Q.5 **A gene which helps to prepare a site on RBC for insertion of antigen is called:**

A) I genes
B) H gene
C) Bombay gene
D) Pleiotropy

Q.6 **X linked gene in male is expressed by:**

A) Absence of SRY gene
B) Absence of recessive gene
C) Absence of dominant gene
D) Expressed whenever present

Q.7 **Majority of hemophilic patients suffer from deficiency of:**

A) Factor VII
B) Factor VIII
C) Factor IX
D) Factor XI

Q.8 **Chances for a man to be affected by hemophilia C is:**

A) Greater than woman
B) Equal to woman
C) Lesser than woman
D) Not predictable

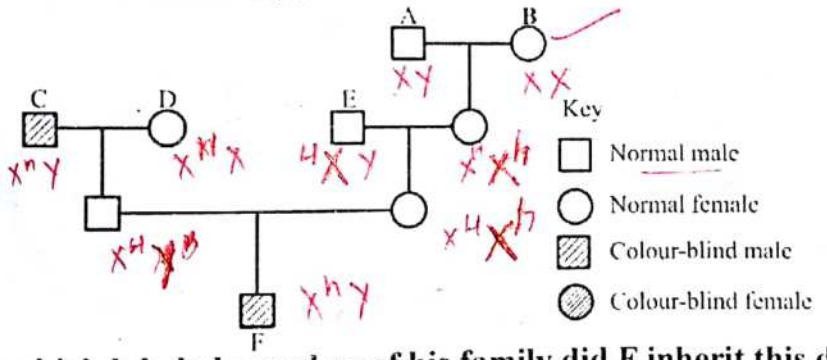
Q.9 **Which of the following cannot be source of mutations?**

A) Retrovirus
B) Drugs
C) X-rays
D) Nutrition

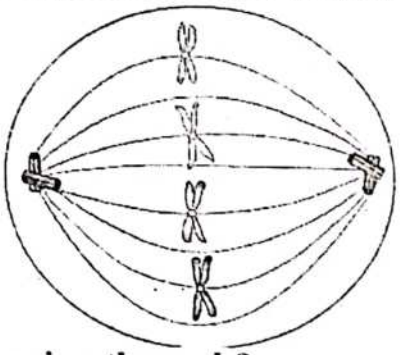
Q.10 **All of the following are seral stages during succession except:**

A) Bare ground
B) Pioneers
C) Mosses
D) Climax community

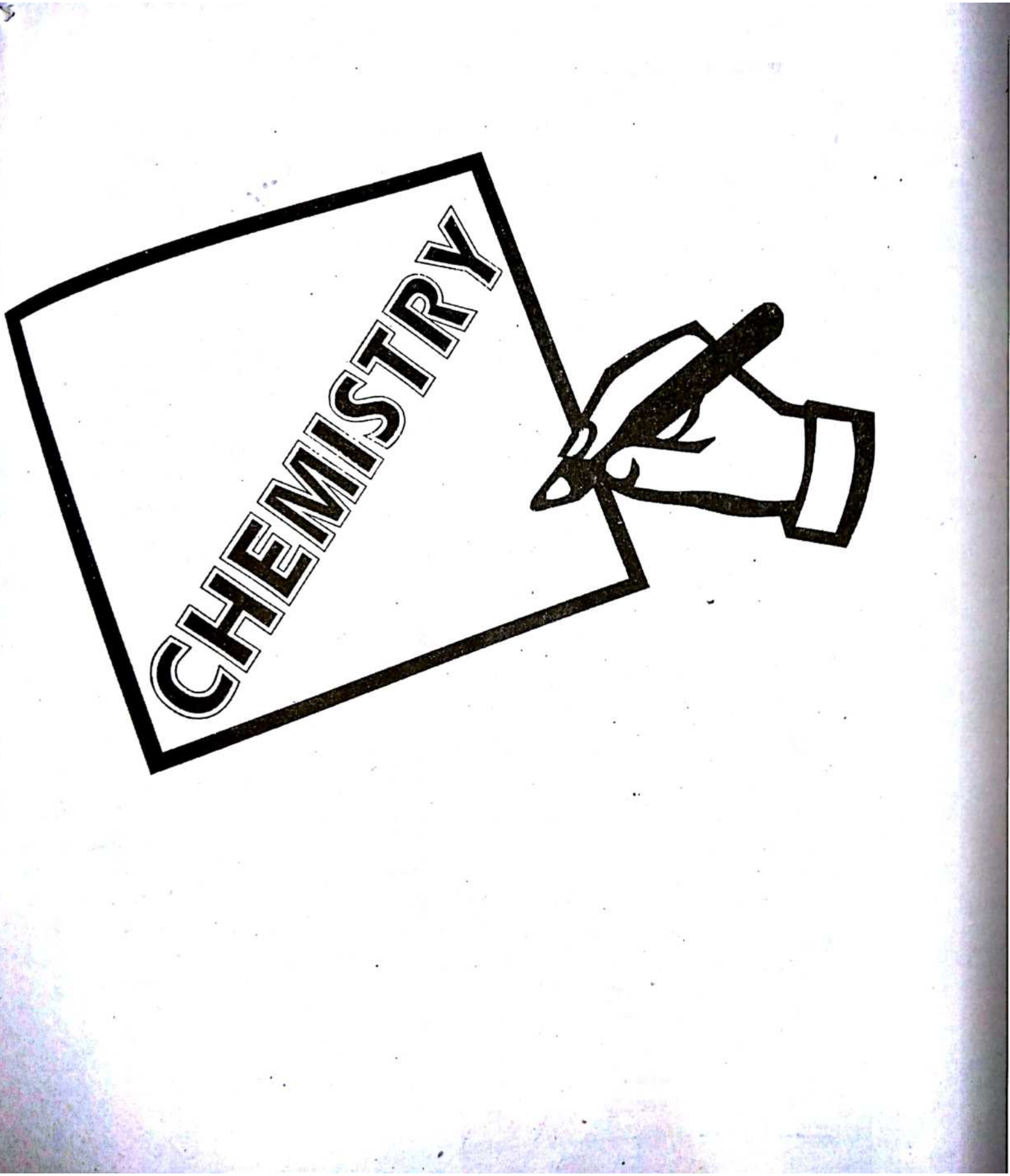
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Q.11	**It is an example of chromosomal aberration:** A) Sickle cell anemia B) Phenylketonuria C) Jacob's syndrome D) Alkaptonuria	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**The position of gene on chromosome is called:** A) Habitat B) Locus C) Niche D) Place	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**XXY in humans is a:** A) Sterile male B) Sterile female C) Fertile male D) Fertile female	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**It is an androgen insensitivity syndrome:** A) Haemophilia B) Colour blindness C) Testicular feminization syndrome D) Hypophosphatemic rickets	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**A woman can suffer from haemophilia A if she is:** A) Homozygous dominant B) Heterozygous C) Homozygous recessive D) Hemizygous recessive	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Alleles in an individual for a particular trait is called its:** A) Phenotype B) Genotype C) Gene pool D) Karyotype	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**The diagram shows the pedigree of a family carrying the sex-linked allele for color-blindness:**  **From which labeled member of his family did F inherit this disorder?**	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Difference of expression of these traits depends upon anatomical features of males and females:** A) Sex-linked traits B) Sex-limited traits C) Autosomal-traits D) Sex-influenced traits	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Edward's syndrome is:** A) Trisomy of autosome 18 B) Monosomy of autosome 18 C) Trisomy of autosome 21 D) Trisomy of autosome 13	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Short stature, webbed neck, no ovaries and complete absence of germ cells are features of:** A) Down's syndrome B) Klinefelter's syndrome C) Turner's syndrome D) Meta female	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.21	**All of the following codons have their complimentary anti-codons except:** A) AUG C) UUU B) UGG D) UAA	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**The first tRNA molecule binds at which site of the mRNA during translation?** A) A site C) E site B) P site D) Anywhere irrespective of codon	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**Total number of amino acids encoded by a single codon?** A) 1 C) 3 B) 2 D) 4	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**In which of the following species, the sex is determined by heterogametic female?** A) Birds C) Human beings *B) Drosophila* D) Protenor bug	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**The replication of DNA occurs during which phase of cell cycle?** A) G_1 phase C) G_2 phase B) S phase D) G_0 phase	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**The microtubules are composed of:** A) Tubulin and actin C) Tubulin and traces of RNA B) Actin and myosin D) Tropomyosin and troponin	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**The diagram below show a typical dividing animal cell.**  **What stage of mitosis is it going through?** A) Prophase C) Anaphase B) Metaphase D) Telophase	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**From the following options, pick the one that best depicts the phenotypic and genotypic ratios of monohybrids of F2 generation?** A) 1:2:1 and 3:1 respectively C) 9:3:3:1 and 1:2:1 respectively B) 3:1 and 1:2:1 respectively D) 3:1 and 9:3:3:1 respectively	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Keeping in view the Mendel's law of Segregation, if tall plants were crossed with short heighted plants, then which of the following best describe the F_1 Progeny?** A) Homozygous and tall heighted C) Heterozygous and tall heighted B) Homozygous and short heighted D) Heterozygous and short heighted	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which one might be the blood group of an individual with the following genetic makeup:** **"L^ML^N, I^Ai, Dd, hh"** A) Phenotypically MN, A and positive B) Phenotypically MN, O and positive C) Phenotypically MN, A and negative D) Phenotypically MN, O and negative	Ⓐ Ⓑ Ⓒ Ⓓ

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UHS Topic – 1-A
F.Sc: Chapter # 1, 9

Fundamental Concepts
MCQs: 04

LEARNING OUTCOMES

BASIC CONCEPTS

1. RELATIVE ATOMIC MASS ☐

2. ISOTOPES ☐
- Relative abundance of isotopes ☐

MASS SPECTROMETRY
- Mass spectrometer ☐
- Principle ☐
- Types ☐
- Working ☐
- Mass spectrum ☐

3. ANALYSIS OF A COMPOUND
- Types of analysis ☐
- Empirical formula ☐
- Steps for finding empirical formula ☐
- Combustion analysis ☐
- Molecular formula ☐

4. CONCEPT OF MOLE ☐
- Avogadro's number ☐
- Molar volume ☐

5. STOICHIOMETRY ☐
- Assumptions ☐
- Limitations ☐

6. LIMITING REACTANTS
- Identification of limiting reactant ☐

7. YIELD
- Actual yield ☐
- Theoretical yield ☐
- Percentage yield ☐

SOLUTIONS (CALCULATIONS)

1. CONCENTRATION UNITS OF SOLUTION
- Percentage composition ☐
- Molarity ☐
- Molality ☐
- Interconversion of various concentration units of solutions ☐
- Parts per million ☐
- Mole fraction ☐

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KIPS SELF ASSESSMENT TEST

Q.1 Calculate number of electrons in 1.6g of CH_4
A) N_A
B) $3N_A$
C) $2N_A$
D) $4N_A$
Ⓐ Ⓑ Ⓒ Ⓓ

Q.2 Calculate the number of neutrons in 4g of heavy water
A) 6.02×10^{24}
B) 1.2×10^{23}
C) 1.2×10^{24}
D) 1.2×10^{22}
Ⓐ Ⓑ Ⓒ Ⓓ

Q.3 Calculate number of H-atoms in 9g of NH_4^+
A) N_A
B) $3N_A$
C) $2N_A$
D) $4N_A$
Ⓐ Ⓑ Ⓒ Ⓓ

Q.4 9g of ice contains number of moles of H-atoms
A) 1
B) 3
C) 2
D) 4
Ⓐ Ⓑ Ⓒ Ⓓ

Q.5 Which one of the following has same number of moles
A) 12g of C, 12g of Mg
B) 12g of C, 24g of Mg
C) 12g of C, 20g of Mg
D) 12g of C, 6g of Mg
Ⓐ Ⓑ Ⓒ Ⓓ

Q.6 CN^- is isoelectronic with
A) H_2O
B) CO
C) F^-
D) H_2S
Ⓐ Ⓑ Ⓒ Ⓓ

Q.7 One mole of N_2 does not contain
A) It contains 6.02×10^{23} molecule
B) It contains $2 \times N_A$ number of N-atoms
C) It contains 28g of Nitrogen
D) 22.414 dm^3 at RTP
Ⓐ Ⓑ Ⓒ Ⓓ

Q.8 The element which show 100% abundance in mass spectrum in one peak
A) Chlorine
B) Iodine
C) Bromine
D) Hydrogen
Ⓐ Ⓑ Ⓒ Ⓓ

Q.9 The ion which undergoes maximum deflection towards detector in mass spectrometer
A) $_{20}Ne^+$
B) $_{21}Ne^+$
C) $_{22}Ne^+$
D) All of these undergoes similar deflection
Ⓐ Ⓑ Ⓒ Ⓓ

Q.10 Which of the following isotope will has smallest radius of circular beam in magnetic field during mass spectrometric analysis
A) C–12
B) C–14
C) C–13
D) All have same deflection
Ⓐ Ⓑ Ⓒ Ⓓ

Q.11 The pair which shows empirical formula CH_2O
A) Methanol, methanoic acid
B) Methoxy methane, ethanal
C) Glucose, ethanoic acid
D) Ethanoic acid, methanol
Ⓐ Ⓑ Ⓒ Ⓓ

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Q.12	**Mass of one molecule of H_2O is** A) 18g B) $\frac{6.02\times10^{23}}{18}g$ C) $\frac{18}{6.02\times10^{23}}g$ D) $18\times6.02\times10^{23}$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**Calculate the number of moles of CO produced when 0.9 moles of O_2 reacts with carbon** $2C+O_2 \longrightarrow 2CO$ A) 18 moles B) 1.8 moles C) 36 moles D) 3.6 moles	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**Stoichiometric calculations are not applicable to** A) $N_2+3H_2 \rightleftharpoons 2NH_3$ B) $2H_2+O_2 \longrightarrow 2H_2O$ C) $C+O_2 \longrightarrow CO_2$ D) $CH_4+2O_2 \longrightarrow CO_2+2H_2O$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**The simplest formula of a compound containing 50% of element X (At.wt = 10) and 50% of element Y (At.wt = 20)** A) X_2Y B) XY C) XY_2 D) X_2Y_2	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**If $20cm^3$ of N_2 reacts with H_2 to produce ammonia calculate the amount of product formed** A) $10cm^3$ B) $30cm^3$ C) $20cm^3$ D) $40cm^3$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**$CaCO_3$ when heated produce CaO and CO_2 calculate the number of molecules of CO_2 when 50g of $CaCO_3$ is heated** A) $\frac{1}{2}N_A$ B) $\frac{3}{2}N_A$ C) N_A D) $2N_A$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**A polymer of empirical formula CH has molar mass 26000glmol it's molecular formula will be _____ times of empirical formula** A) 100 B) 1000 C) 200 D) 2000	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**A mixture of $10cm^3$ of oxygen and $50cm^3$ of hydrogen gas sparked together to form H_2O. Calculate the volume of non-limiting reactant left after completion of reaction** A) $20cm^3$ B) $40cm^3$ C) $30cm^3$ D) $50cm^3$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Which of these samples of gas contains same number of atoms as in 1g of H_2** A) 22g of CO_2 B) 20g of Ne C) 8g of CH_4 D) 8g of ozone	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**A substance X was found to contain 72% of carbon, 12% Hydrogen and 16% oxygen empirical formula of X is** A) C_2H_4O B) C_3H_6O C) C_6H_2O D) $C_6H_{12}O$	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.22	**Number of Peaks in mass spectrum refers to** A) Relative abundance C) No of isotopes B) Molecular formula D) Exact molecular mass	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**Calculate the molarity of oxalic acid when 12.6 g of oxalic acid is dissolved in 250cm^3 of solution (Mr-126g)** A) 0.1M C) 0.2M B) 0.3M D) 0.4M	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Calculate molarity of 20% NaOH solution** A) 2.5M C) 5M B) 7.5M D) 10M	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**A solution containing 5g in 100cm^3 of solution. Then the solution has composition** A) 5% w/w C) 5 % w/v B) 5% v/w D) 5% v/v	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**By increasing temperature an aqueous solution will cause** A) Decrease in molarity C) Decrease in mole fraction B) Decrease in % w/w D) Decrease in molality	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**A mixture contain 7g N_2 and 8g O_2. Mole fraction of O_2** A) 1 C) 0.1 B) 0.5 D) 0.2	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Sum of mole fraction of all components in a solution is equal to** A) 1 C) 2 B) 3 D) 4	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Calculate mass of 10^{-3} moles of $MgSO_4$** A) 0.12 C) 0.13 B) 0.14 D) 0.15	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Mass spectra of which of the following species will have same number of peaks as in case of chlorine** A) Br C) F B) I D) H	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 2

UHS Topic – 2A
F.Sc: Chapter # 3, 4

States of Matter
MCQs: 02

LEARNING OUTCOMES

GASES

1. GAS LAWS

- Boyle's law
- Experimental verification of Boyle's law
- Graphical explanation of Boyle's law
- Charles's law
- Experimental verification of Charles's law
- Derivation of absolute zero
- Graphical explanation of absolute zero
- Scales of thermometry

2. GENERAL GAS EQUATION

- Ideal gas constant R
- Density of an ideal gas

3. AVOGADRO'S LAW

4. KINETIC MOLECULAR THEORY OF GASES

- Kinetic equation of gases
- Explanation of gas laws from kinetic theory of gases

5. KINETIC INTERPRETATION OF TEMPERATURE

6. Non-ideal behaviour of gases

- Causes for deviations from ideality
- Van der Waal's equation for red gases

LIQUIDS

- Hydrogen bonding
- Properties and applications of compounds containing hydrogen bonding

1. EVAPORATION

- Vapour pressure
- Vapour pressure increases with temperature
- Measurement of vapour pressure
- Monometric method
- Boiling point
- Boiling point and external pressure

SOLIDS

2. CLASSIFICATION OF SOLIDS

IONIC SOLID

- Properties of ionic solid
- Structure of NaCl
- Lattice energy

COVALENT SOLIDS

- Properties of covalent solids
- Structure of solid iodine

MOLECULAR SOLIDS

- Properties of molecular solids
- Structure of solid iodine

METALLIC SOLIDS

- Properties of metallic solids
- Structure of metals

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KIPS SELF ASSESSMENT TEST

Q.1 Which one of the following statement is wrong for gases? (A) (B) (C) (D)
A) Gases don't have a definite shape and volume
B) Volume of the gas is equal to volume of container that confining the gas.
C) Confined gas exerts uniform pressure on the walls of its container in all directions.
D) Mass of gas cannot be determined by weighing a container in which it is enclosed.

Q.2 At which temperature, the volume of a gas at 0°C double of itself, when pressure remains constant? (A) (B) (C) (D)
A) 100°C
B) 373°C
C) 273°C
D) 546°C

Q.3 At constant pressure of a given gas, if temperature reduced to half, volume of gas changes to (A) (B) (C) (D)
A) Half
B) Doubled
C) No change
D) Quadruple

Q.4 At constant temperature, if pressure doubled of a given gas, what will be its volume (A) (B) (C) (D)
A) Decreased to $1/4^{th}$
B) Doubled
C) Decreased to half
D) Quadrupled

Q.5 For a given amount of a gas, if its pressure reduced to half and temperature is doubled then its final volume is (A) (B) (C) (D)
A) Half
B) Doubled
C) No change
D) Quadrupled

Q.6 The density of a gas is 1.96g/dm^3 at S.T.P, which gas it is (A) (B) (C) (D)
A) H_2
B) CO
C) He
D) CO_2

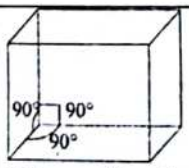
Q.7 For which value of compressibility factor a gas is more ideal (A) (B) (C) (D)
A) 0.9
B) 1.2
C) 1
D) 1.3

Q.8 At which conditions a real gas, act as an ideal gas (A) (B) (C) (D)
A) High temperature, low pressure
B) High temperature, High pressure
C) Low temperature, high pressure
D) Low temperature, low pressure

Q.9 Based on kinetic molecular theory of gases, which of following laws can be proved (A) (B) (C) (D)
A) Boyle's law
B) Avogadro's law
C) Charles's law
D) All of these

Q.10 Which of the following is not a feature of solids (A) (B) (C) (D)
A) Definite mass and volume
B) Rigidity
C) Frequent fluidity
D) Definite shape

Q.11 (A) (B) (C) (D)



The unit cell given above refer to _____ crystal system when a = b = c
A) Trigonal
B) Orthorhombic
C) Cubic
D) Tetragonal

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Q.12	**Which of the following is not anisotropic property** A) Refractive index B) Melting point C) Coefficient of thermal expansion D) Cleavage planes	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**Which of the following is a pseudo solid?** A) CaF_2 B) NaCl C) Glass D) Diamond	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**Volume of water at 4°C is 200cm³, what is its volume at – 1°C, when external pressure is 1atm.** A) 200cm³ B) 218cm³ C) 209cm³ D) 227cm³	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**The overall structure of diamond is** A) Tetrahedral B) Face-centered cubic C) Hexagonal D) Body-centered cubic	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**How much total ions present per unit cell of NaCl?** A) 1 B) 8 C) 4 D) 16	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Which of the following compound has highest lattice energy** A) LiCl B) KCl C) NaCl D) NaI	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Which metal has highest electrical conductivity** A) Na B) Mg C) Al D) Si	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**The structure normally associated with ionic bonding is** A) A giant lattice B) A giant molecules C) A regular arrangement of ions surrounded by a sea, or cloud of electrons D) A simple molecules	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Which of the following have highest boiling point** A) CH_4 B) SnH_4 C) SiH_4 D) GeH_4	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**Strongest hydrogen bond present in** A) HF B) NH_3 C) H_2O D) CH_4	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**Which liquid has highest vapour pressure** A) Br_2 B) H_2O C) CH_3OH D) C_2H_5OH	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**Which of the following has strongest intermolecular forces of attraction** A) Hydrogen (H_2) B) Hydrogen chloride (HCl) C) Chlorine (Cl_2) D) Hydrogen fluoride (HF)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Which one is false for evaporation** A) Surface phenomenon B) Exothermic C) Continuous D) Cause cooling	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.25	**Strongest London dispersion forces are present in** A) F_2 C) Br_2 B) Cl_2 D) I_2	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Which one of the following does not show hydrogen bonding** A) Water C) Ethyl alcohol B) Phenol D) Diethyl ether	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**Boiling point of any liquid does not depends upon** A) External pressure C) Intermolecular forces B) Amount of heat D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Upon which factor evaporation does not depend upon** A) Surface area C) Temperature B) Amount of liquid D) Intermolecular forces	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Which compound have minimum vapour pressure at a specific temperature** A) n–Hexane C) Iso-Hexane B) Neo-Hexane D) All have same vapour pressures	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which one of the following is incorrect about Boyle's law** A) $V \propto \frac{1}{P}$ C) $V = \frac{k}{P}$ B) $k = \frac{V}{P}$ D) $P_1V_1 = P_2V_2$	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 3

UHS Topic – 3A
F.Sc: Chapter # 5, 6

Atomic Structure
MCQs: 02

LEARNING OUTCOMES

ATOMIC STRUCTURE

1. PROPERTIES OF FUNDAMENTAL PARTICLES
- Deflection of fundamental particles in electric field ☐
- Calculation e/m ratio of electrons ☐
- Find number of neutron in isotopes ☐
- Proton number ☐
- Mass number ☐
- Nucleon number ☐

2. QUANTUM NUMBERS
- Principle quantum number ☐
- Azimuthal quantum number ☐
- Magnetic quantum number ☐
- Spin quantum number ☐
- Shapes of orbitals ☐
- Shape of s-orbital ☐
- Shape of p-orbital ☐
- Shape of d-orbital ☐

3. ELECTRONIC CONFIGURATION
- $n + l$ rule ☐
- Auf Bau principle ☐
- Hund's rule ☐
- Pauli exclusion principle ☐

4. IONIZATION ENERGY
- Factor effecting ionization energy ☐
- Trend of ionization energy in periodic table ☐

5. ELECTRON AFFINITY
- Factor effecting on electron affinity ☐
- Trend of electron affinity in periodic table ☐
- Uses of electron affinity ☐

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KIPS SELF ASSESSMENT TEST

Q.1 Which one of the following configuration represents an element that form a simple anion with charge of –3?

A) $1s^2, 2s^2, 2p^6, 3s^2, 3p^1$
B) $1s^2, 2s^2, 2p^6, 3s^1$
C) $1s^2, 2s^2, 2p^6, 3s^2, 3p^3$
D) $1s^2, 2s^2, 2p^6, 3s^2$

Q.2 The atomic number of element that has four unpaired electrons in its ground state is

A) 6
B) 16
C) 14
D) 26

Q.3 Which of the following represents a particle with composition of 1 proton, 1 neutron and 2-electrons

A) D
B) He
C) D^-
D) He^-

Q.4 The species having same number of electrons and neutrons

A) $^{9}_{4}Be$
B) $^{23}_{11}Na^+$
C) $^{19}_{9}F$
D) $^{18}_{8}O^{-2}$

Q.5 A species having the following electronic configuration
$1s^2, 2s^2, 2p^6, 3s^2, 3p^4$
The species would be

A) Cl^+
B) P^-
C) S
D) All of these

Q.6 The mass of neutron is _____ times heavier than electron

A) 1836
B) 1800
C) 1840
D) 1830

Q.7 During the excitation of carbon atom the value which changes

A) Number of orbitals in valence shell
B) Number of subshells in valence shell
C) Number of valence electrons
D) Number of unpaired electrons in valence shell

Q.8 The subshell which has highest energy

A) 5s
B) 3d
C) 5p
D) 4f

Q.9 What is correct sequence of energy in the orbitals according to $(n + l)$ rule

A) 4p > 3d > 4s > 3p
B) 4s > 4p > 3d > 3p
C) 3d > 4p > 4s > 3p
D) 3p > 3d > 4s > 4p

Q.10 s, p, d, f are used to represent

A) Orbit
B) Subshells
C) Shells
D) Orbitals

Q.11 If the value of $l = 0$ then number of electrons present in subshell and orbitals respectively are

A) 6,2
B) 2,2
C) 2,6
D) 10,2

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Q.12 Value of n + *l* for 3d subshell is

A) 3 B) 5 C) 4 D) 6

Q.13 When *l* = 2 number of electrons in a subshell is

A) 10 B) 2 C) 14 D) 6

Q.14 The set of quantum numbers which is not possible

A) n = 2, *l* = 1, m = 0
B) n = 2, *l* = 2, m = –1
C) n = 2, *l* = 0, m = o
D) n = 2, *l* = 1, m = +1

Q.15 The correct set of quantum numbers for the valence electron of sodium is

A) n = 2, *l* = 0, m = 0
B) n = 4, *l* = 0, m = 0
C) n = 3, *l* = 0, m = 0
D) n = 5, *l* = 0, m = 0

Q.16 The number of orbitals in a shell having n = 2

A) 2 B) 9 C) 4 D) 16

Q.17 The element violating Auf -Bau's principle

A) Zn B) Se C) Cu D) Ti

Q.18 The atoms having similar number of s and p electrons

A) Mg B) Ne C) Na D) F^-

Q.19 The maximum number of electrons with clockwise spin that can be accommodated in a f-orbital

A) 1 B) 10 C) 7 D) 5

Q.20 Which of the following is not true for principal energy level having n = 3

A) There are three subshells
B) There are nine orbital
C) There are maximum 18 electrons
D) There are maximum six electron with *l* = 2

Q.21 Which of the following contains same number of neutrons as in $^{32}_{15}P$

A) $^{28}_{14}Si$ B) $^{31}_{15}P$ C) $^{32}_{16}S$ D) $^{33}_{16}S$

Q.22 Two electrons in K-shell will differ in

A) Principal quantum number B) Magnetic quantum number C) Azimuthal quantum number D) Spin quantum number

Q.23 Highest ionization energy is attributed to

A) C B) O C) N D) F

Q.24 Why is the first ionization energy of Ne higher than that of fluorine

A) F is more electronegative than neon
B) Neon has complete octet but fluorine does not
C) Atomic radius of fluorine is less than Neon
D) Nuclear charge of neon is greater than fluorine

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Q.25 The fourth electron of Be atom will have set of quantum number

A) 1, 0, 0, $\frac{1}{2}$

B) 2, 1, 0, $\frac{+1}{2}$

C) 2, 0, 0, $\frac{-1}{2}$

D) 1, 1, 1, $\frac{+1}{2}$

Q.26 Na forms Na^{+1} but does not form Na^{+2} because of

A) High $I.E_1$

B) High $I.E_2$

C) Low $I.E_1$

D) Low $I.E_2$

Q.27 The element which has highest electron affinity

A) O

B) S

C) Te

D) Se

Q.28 The correct order of electron affinity is

A) $F_2 > Cl_2 > Br_2 > I_2$

B) $Cl_2 > Br_2 > F_2 > I_2$

C) $I_2 > Cl_2 > Br_2 > F_2$

D) $Br_2 > Cl_2 > F_2 > I_2$

Q.29 The correct order of second ionization energies

A) O > N > F > C

B) C > O > N > F

C) F > O > N > C

D) O > F > N > C

Q.30 The hypothetical values of ionization energies are given below calculate number of valence electrons

$I.E_1$ = 100kJ/mol, $I.E_2$ = 250kJ/mol, $I.E_3$ = 1000 kJ/mol

A) 2

B) 4

C) 3

D) 5

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LEARNING OUTCOMES

CHEMICAL BONDING

1. IONIC BOND

- Percentage ionic bond (NaCl, CaO) ☑

2. DOT CROSS DIAGRAM

- H_2, O_2, Cl_2, HCl, CO_2, CH_4, C_2H_6 ☑
- Coordinate covalent bond ☑
- NH_4^+, NH_3 and BF_3, H_3O^+ ☑

3. VSEPR THEORY

- Shapes of molecule up to 4 electron pairs ☑

4. SIGMA AND PI BOND

- Shapes and bond angles ☑
- C_2H_6, C_2H_4, C_6H_6 ☑

5. HYDROGEN BONDING

- NH_3, H_2O, molecules ☐

6. BOND LENGTH, BOND ENERGY, POLARITY OF BOND

- Factors affecting bond energy, bond length and polarity ☐

7. INTERMOLECULAR FORCES OF ATTRACTION

- Types of intermolecular force of attraction ☐

8. METALLIC BOND

- Electron sea theory ☐

9. EFFECT OF BONDING ON PHYSICAL PROPERTIES

- Ionic bond ☐
- Covalent bond ☐
- Covalent bond (polar, non-polar) ☐
- Hydrogen bonding ☐

10. IDENTIFICATION OF BOND TYPE

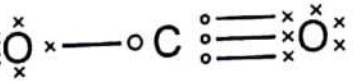
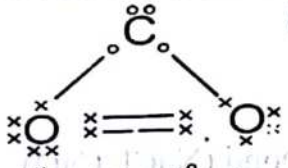
- Basis of electronegativity difference ☐

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KIPS SELF ASSESSMENT TEST

Q.1 Nature of bonds between two element depends upon
A) Oxidation potential
B) Ionization potential
C) Electronegativity difference
D) Electron affinity

Q.2 Correct dot and cross diagram for CO_2 is

A) 
B) 
C) 
D) 

Q.3 Electronic configuration of two element X, Y are
$X = 1s^2, 2s^2, 2p^6, 3s^1$
$Y = 1s^2, 2s^2, 2p^6, 3s^2, 3p^5$
Formula and nature of compound formed by combination of these element is
A) X_2Y Covalent
B) XY Covalent
C) XY_2 Ionic
D) XY Ionic

Q.4 Co-ordinate covalent bond is absent in
A) BH_4^-
B) H_3O^+
C) NH_4^+
D) CO_2^+

Q.5 NF_3 is NOT iso-structural with
A) H_3O^+
B) BF_3
C) CH_4
D) NH_3

Q.6 Molecules shape of NH_3 and CF_4 is
A) Both are tetrahedral
B) Both are trigonal pyramidal
C) Trigonal pyramidal and tetrahedral respectively
D) Tetrahedral and trigonal planner respectively

Q.7 Lone pair - Lone pair repulsion is strongest in
A) H_2O
B) H_2S
C) SO_2
D) NF_3

Q.8 A π bond is formed
A) By axial overlap of two perpendicular orbitals of two isolated atoms
B) By parallel overlap of two parallel orbitals two isolated atom's
C) By head to head overlap of two parallel orbitals of two bounded atoms
D) By head to head overlap of two perpendicular orbitals two bounded atoms

Q.9 Ratio between σ and π bonds in benzene is
A) 1:2
B) 4:1
C) 1:6
D) 6:1

Q.10 Two atoms bounded by polar covalent bond have electronegativity difference
A) 2.5
B) 4.0
C) less than 1-7
D) more than 1-7

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Q.11 **Correct set of information's about ethene is** Ⓐ Ⓑ Ⓒ Ⓓ
A) Tri-angular planner, 120° sp^2- hybridization
B) Tetrahedral 120° sp-hybridization
C) Tri-angular planner, 90° sp^2- hybridization
D) Trigonal pyramidal less than 120° sp^2-Hybridization

Q.12 **Ratio of C–H σ bonds in ethane and benzene is** Ⓐ Ⓑ Ⓒ Ⓓ
A) 1:2 C) 1:1
B) 2:1 D) 3:4

Q.13 **Nitrogen having small size forms a hydride NH_3 the correct order of boiling point of group VA hydrides are** Ⓐ Ⓑ Ⓒ Ⓓ
A) $NH_3 < PH_3$ C) $AsH_3 < NH_3 > PH_3$
B) $NH_3 < AsH_3$ D) $NH_3 > SbH_3$

Q.14 **Strongest hydrogen bonding in present between the molecules of** Ⓐ Ⓑ Ⓒ Ⓓ
A) HCl C) HF
B) NH_3 D) H_2O

Q.15 **Correct statement about hydrogen bonding is** Ⓐ Ⓑ Ⓒ Ⓓ
A) Hydrogen of one molecule form covalent bond with electronegative atom of other molecule
B) Hydrogen of one molecule form covalent bond with more than one electronegative atoms
C) Hydrogen of one molecule bounds of electronegative atom of other molecule forming coordinate covalent bond
D) Hydrogen of one molecular forms ionic bond with other atoms

Q.16 **An atom surrounded by two bond pairs and one lone pair will have bond angle as** Ⓐ Ⓑ Ⓒ Ⓓ
A) 90° C) 120°
B) Less than 120° D) 109.5°

Q.17 **Which of the following specie contain three bond pair and one lone pair around central atom** Ⓐ Ⓑ Ⓒ Ⓓ
A) NH_2^- C) H_2O
B) PCl_3 D) BF_3

Q.18 **Which of the following bond has most polar character** Ⓐ Ⓑ Ⓒ Ⓓ
A) C–O C) C–Br
B) C–S D) C–F

Q.19 **Physical state of I_2 is solid whereas F_2 is a gas this charge is due to** Ⓐ Ⓑ Ⓒ Ⓓ
A) Enhanced electronegative character of I_2 as compared to F_2
B) Strong intermolecular forces is I_2 as compared to F_2
C) High polarizability of F_2
D) Low electron affinity of F_2

Q.20 **Forces present between HCl molecules are** Ⓐ Ⓑ Ⓒ Ⓓ
A) LDF C) DDF
B) DIDF D) IDF

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Q.21	**Correct statement about metallic structure according to $\bar{e}$ sea theory** A) Mobile $\bar{e}$ remains fixed with a single nucleus B) Every nucleus bonds firmly with mobile force $\bar{e}$ C) Free $\bar{e}$ move randomly theory at metallic lattice D) Force which binds metallic ion together is called metallic bond	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**London depression force are only force present between** A) Sample of Ice B) Liquefied CO_2 C) Liquefied NH_3 D) Sugar molecules	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**During formation of chemical bond** A) Energy decreases B) Energy increases C) No change energy D) $\bar{e}$ - $\bar{e}$ repulsion become more than Nuclear- $\bar{e}$ attraction	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Electrovalent compounds have** A) Low melting point B) Low boiling point C) Conduct current in solid state D) In soluble in polar solvent	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**Theoretical bond energy of HCl is 336.6 kJ/mol while practical bond energy of HCl is 436 kJ/mol this fact gave the result** A) Electronegativity difference is present B) Bond length of HCl has increased than theoretical C) Bond order has increased D) All of above	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Covalent radius of C and Cl are 77 and 99 pm C—Cl bond length in CCl_4 will be** A) Greater than 176 pm B) Less than 176 pm C) Equal to 176 pm D) Will be 88 pm	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**A solid having polar molecules, is non-conductor in solid state, melts about 273 K, will most probably belong to** A) Ionic solid B) Molecular solid C) Metallic solid D) Covalent solid	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Solid soluble in polar solvent, having high melting point, less volatility non- conductor will belong to** A) Ionic solid B) Covalent solid C) Molecules solid D) Metallic solid	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**NaCl is an ionic compound, where HCl is a gas because of** A) Sodium is reactive B) HCl is polar molecule C) Covalent bond is weaker than ionic bond D) Covalent bond is stronger than ionic bond	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which one of the following is not a covalent solid** A) Graphite B) Silver C) Diamond D) Silica	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 5

UHS Topic – 5A + 6A
F.Sc: Chapter # 7, 10

Chemical Energetics & Electrochemistry
MCQs: 2+2

LEARNING OUTCOMES

THERMOCHEMISTRY

1. TYPE OF REACTION

- Exothermic reaction
- Endothermic reaction

2. ENTHALPY OF A REACTION

- Enthalpy of formation ($\Delta H°_f$)
- Enthalpy of atomization ($\Delta H°_{at}$)
- Enthalpy of neutralization ($\Delta H°_n$)
- Enthalpy of combustion ($\Delta H°_c$)
- Enthalpy of solution ($\Delta H°_{sol}$)

3. BOND ENERGY

4. LATTICE ENERGY

- Effect of ionic charge and ionic radius on lattice energy

5. MEASUREMENT OF ENTHALPY OF A REACTION

- Glass calorimeter
- Bomb calorimeter

6. HESS'S LAW AND BORN-HABER CYCLE

- Born-Haber cycle (NaCl)

ELECTROCHEMISTRY

1. OXIDATION STATE AND BALANCING OF REDOX EQUATIONS.

- By oxidation number method
- By ion electron method

2. ELECTRODE POTENTIAL

- Standard hydrogen electrode (SHE)
- Measurement of electrode potential

3. ELECTROCHEMICAL SERIES AND APPLICATIONS

- Prediction of the feasibility of a chemical reaction
- Calculation of the voltage or electromotive (emf) of cells.
- Comparison of relative tendency of metals and non-metals to get oxidized or reduced.
- Relative chemical reactivity of metals.
- Reaction chemical reactivity of metals.
- Reaction of metals with dilute acids
- Displacement of one metal by another from its solution
- Fuel cell and its advantages

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KIPS SELF ASSESSMENT TEST

Q.1 The endothermic reaction is
A) Combustion
B) Evaporation
C) Neutralization
D) Respiration

Q.2 Which one of the following is always endothermic
A) Heat of solution
B) Heat of atomization
C) Heat of electron affinity
D) Heat of formation

Q.3 In the following reaction

$2HF \xrightarrow{2000^{\circ}C} H_2 + F_2 \qquad \Delta H = 545 kJmol^{-1}$

The bond energy of H–H is 436kJmol, H–F is 568kJmol^{-1} and F – F is
A) 154 kJmol^{-1}
B) 156 kJmol^{-1}
C) 155 kJmol^{-1}
D) 158 kJmol^{-1}

Q.4 LiF is more stable than LiCl, It can be explain in terms of
A) Lattice energy
B) Atomization energy
C) Neutralization energy
D) Ionization energy

Q.5 The branch of chemical science dealing with the study of heat and energy changes in known as
A) Thermodynamics
B) Reaction kinetics
C) Electrochemistry
D) Dynamic equilibrium

Q.6 Identify the state function among the following
A) Q
B) Q/w
C) Q – W
D) Q + w

Q.7 Which of the following reaction defines ΔH_f° ?

A) $C(\text{diamond}) + O_{2(g)} \longrightarrow CO_{2(g)}$

B) $\frac{1}{2}H_{2(g)} + \frac{1}{2}F_{2(g)} \longrightarrow CO_{2(g)}$

C) $N_{2(g)} + 3H_{2(g)} \longrightarrow 2NH_{3(g)}$

D) $CO_{(g)} + \frac{1}{2}O_{2(g)} \longrightarrow CO_{2(g)}$

Q.8 The work done by a system is 10 joule, when 40 joule heat is supplied it. What is the increase in internal energy of system?
A) 30J
B) 40J
C) 50J
D) 20J

Q.9 Which one of the following has greater lattice energy
A) LiF
B) LiBr
C) LiCl
D) LiI

Q.10 Enthalpy changes which cannot be found by calorimeter, can be calculated by help of
A) 1st law of thermodynamics
B) Boyle's law
C) Hess's law
D) Raoult's law

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Q.11 Enthalpy changes are due to
A) Breaking bonds
B) Ionic bonds
C) Forming bonds
D) Both 'A' and 'B'

Q.12 To increases temperature of 1g of water by 1°C, it requires energy equal to
A) 4.18J
B) 4.21J
C) 4.81J
D) 4.12J

Q.13 Change in energy between a chemical reaction and surroundings at constant temperature is called
A) Enthalpy change
B) Enthalpy profile
C) Enthalpy
D) Dynamic Enthalpy

Q.14 Fireworks release energy in form of
A) Heat
B) Sound
C) Light
D) All of above

Q.15 Energy which is required to elevate temperature of 1g of liquid by 1°C is called
A) Ideal heat capacity
B) Latent heat capacity
C) Specific heat capacity
D) Specific

Q.16 Oxidation state of manganese in MnO_2^- is
A) +2
B) +4
C) +3
D) +5

Q.17 Which of the following is not a redox reaction?
A) $MgCO_3 \longrightarrow MgO + CO_2$
B) $O_2 + 2H_2 \longrightarrow 2H_2O$
C) $Na + H_2O \longrightarrow NaOH + \frac{1}{2}H_2$
D) $SnCl_4 \longrightarrow SnCl_2 + Cl_2$

Q.18 The oxidation state of Cr in $K_2Cr_2O_7$ is
A) +1
B) +3
C) +6
D) +7

Q.19 Oxidation number of carbon in $H_2C_2O_4$, CH_4 and diamond respectively are
A) +3, -4 and zero
B) +3, +4 and +4
C) +6, +4 and zero
D) +6, +4 and +4

Q.20 A standard hydrogen electrode has zero electrode potential because
A) Hydrogen in easiest to oxidize
B) Its electrode potential is assumed to be zero
C) Hydration atom has only one electron
D) Hydrogen is the lightest element

Q.21 If a strip of Cu-metal is placed in a solution of $FeSO_4$ then
A) Cu will be deposited
B) Fe is precipitated
C) Cu and Fe both dissolve
D) No reaction occur

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Q.22	**The oxidation potential of Mg and Al are +2.37 and 1.66 V respectively. When these two are coupled the emf of cell is** A) +0.71 V C) 4.03 B) -0.71 V D) -2.37	(A) (B) (C) (D)
Q.23	**The good reducing agent among the following** A) Na C) Ca B) K D) Al	(A) (B) (C) (D)
Q.24	**The conductivity of current through external circuit in a galvanic cell is called** A) Electrolytic conduction C) Magnetic conduction B) Electronic conduction D) Ionic Conduction	(A) (B) (C) (D)
Q.25	**Four metals A, B, C and D are having standard electrode potentials as +1.67, +2.16, -0.4 and -0.1 V respectively. The element should be above in the ECS is** A) A C) C B) B D) D	(A) (B) (C) (D)
Q.26	**The advantage of developing the H_2/O_2 fuel cell is/are** A) It has higher efficiency than diesel or gas engines B) The water is produced as by product which can be used for drinking purpose C) The cheap fuel H_2/O_2 is used in the this cell D) All of these	(A) (B) (C) (D)
Q.27	**The gas evolve at anode during electrolysis of aq.H_2SO_4 is** A) H_2 C) O_2 B) SO_2 D) Cl_2	(A) (B) (C) (D)
Q.28	**Following are four electrodes with their standard reduction potentials** **A** $E^o = +2.17$ V **B** $E^o = +1.51$ V **C** $E^o = -1.99$ V **D** $E^o = +0.4$ V **The most feasible reaction takes place when** A) A coupled with B C) A coupled with D B) C coupled with A D) B coupled with C	(A) (B) (C) (D)
Q.29	**The metal which tends to corrode rapidly** A) Copper C) Aluminum B) Iron D) Silver	(A) (B) (C) (D)
Q.30	**The charge on cathode in Galvanic cell is** A) -ve C) Both positive and negative B) +ve D) No charges	(A) (B) (C) (D)

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KIPS UNIT- 6

UHS Topic – 7A + 8A
F.Sc: Chapter # 8 + 11

Chemical Equilibrium, Reaction Kinetics
MCQs: 2+2

LEARNING OUTCOMES

CHEMICAL EQUILIBRIUM

1. **REVERSIBLE AND IRREVERSIBLE REACTIONS**
2. **LAW OF MASS ACTION** ☐
   - Units of equilibrium constants ☐
3. **EQUILIBRIUM CONSTANT EXPRESSION FOR SOME IMPORTANT REACTIONS** ☐
4. **RELATIONSHIP BETWEEN EQUILIBRIUM CONSTANTS** ☐
5. **APPLICATIONS OF EQUILIBRIUM CONSTANT** ☐
   - Direction of reaction
   - Extent of reaction ☐
6. **EFFECT OF CONDITIONS ON POSITION OF EQUILIBRIUM** ☐
   - Le-Chatelier's Principle ☐
   - Effect of change in concentration, pressure, volume and temperature ☐
   - Effect of catalyst on equilibrium constants ☐
7. **APPLICATIONS OF CHEMICAL EQUILIBRIUM IN INDUSTRY** ☐
   - Synthesis of ammonia by Haber's process ☐
   - Preparation of sulphur trioxide ☐
   - Ionic product of water ☐
   - pH and pOH
8. **IONIZATION CONSTANTS OF ACIDS (Ka)** ☐
   - Percentage of ionization of acids ☐

REACTION KINETICS

1. **RATE OF REACTION**
   - Types of rate ☐
   - Instantaneous rate ☐
   - Average rate ☐
2. **SPECIFIC RATE CONSTANT OR VELOCITY CONSTANT** ☐
3. **ORDER OF REACTION**
   - Zero order ☐
   - First order ☐
   - Pseudo first order ☐
   - 2nd order ☐
   - 3rd order ☐
   - Negative order ☐
4. **HALF LIFE PERIOD** ☐
5. **RATE DETERMINING STEP** ☐
6. **DETERMINATION OF RATE OF CHEMICAL REACTION**
   - Physical methods ☐
   - Spectrometry ☐
   - Electrical conductivity method ☐
   - Dilatometric method ☐

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9. IONIZATION CONSTANTS OF BASES (Kb)
10. LOWERY BRONSTED ACID AND BASE CONCEPTS
11. COMMON ION EFFECT
12. BUFFER SOLUTIONS
- Acidic and basic buffer
- Need of buffer
- Buffer action
- pH of a buffer
- Buffer capacity

13. EQUILIBRIA OF SLIGHTLY SOLUBLE IONIC COMPOUNDS
- Determination of K_{sp} from solubility
- Determination of solubility from K_{sp}

- Refractometric method
- Optical rotation method
- Chemical method

7. ENERGY OF ACTIVATION
8. FINDING THE ORDER OF REACTION
- Method of hit and trial
- Graphical method
- Differential method
- Half-life method
- Method of large excess

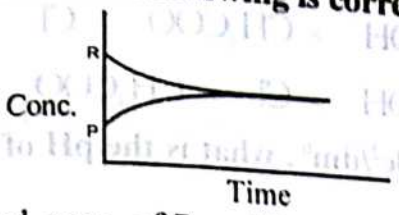
9. FACTORS AFFECTING RATE OF REACTION
- Nature of reactants
- Concentration of reactants
- Surface area
- Light
- Effect of temperature

10. ARRHENIUS EQUATION
11. CATALYSIS
- Homogeneous
- Heterogeneous
- Characteristics of a catalyst
- Activation of catalyst
- Negative catalysis
- Auto catalysis
- Enzyme catalysis

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KIPS SELF ASSESSMENT TEST

Q.1 For graph, which of the following is correctly related about equilibrium



A) [R] > [P] and conc. of R and P are constant
B) [R] > [P] and conc. of R and P are constant
C) [R] = [P] and conc. of R and P are constant
D) [R] = [P] and conc. of R and P are varying

Q.2 K_c expression for $N_2O_4 \rightleftharpoons 2NO_2$ is

A) $\frac{4x^2}{(a-2x)^2V}$ B) $\frac{2x^2V}{(a-x)}$ C) $\frac{4x^2}{(a-x)V}$ D) $\frac{2x}{(a-x)V}$

Q.3 For reaction $H_2 + I_2 \rightleftharpoons 2HI$ equilibrium concentration of H_2, I_2 and HI are 8.0, 3 and 28 mol/dm^3 respectively equilibrium constant of reaction is

A) 32.67 C) 31.67
B) 34.67 D) 36.47

Q.4 At equilibrium total number of mole of reaction $2HI \rightleftharpoons H_2 + I_2$ are? If α is degree of dissociation

A) 2 C) $1-\alpha$
B) $2-\alpha$ D) 1

Q.5 Which of the following will shift the reaction in forward reaction

$$I_{2(g)} \rightleftharpoons 2I_{(g)} \qquad \Delta H = +150kJ$$

A) Increases in concentration of I C) Decreases in concentration of I_2
B) Increases in total pressure D) Increases in temperature

Q.6 Position of equilibrium of reversible reaction is not influenced by

A) Temperature C) Catalyst
B) Pressure D) Concentration

Q.7 Reaction quotient for a reaction $N_2 + 3H_2 \rightleftharpoons 2NH_3$ is given by

$$Q = \frac{[NH_3]^2}{[N_2][H_2]^3},$$

The reaction will be nearest to completion

A) $Q < K_c$ C) $Q = 0$
B) $Q > K_c$ D) $Q = Kc$

Q.8 Which of the following condition will be best suitable to get maximum yield of NH_3 in Haber process

A) 200-300 atm, 400°C, Fe/MgO catalyst
B) 400 atm, 200°C, Fe/MgO catalyst
C) 200 atm, 200°C, V_2O_5 catalyst
D) 1 atm 450° FeO catalyst

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Q.9 According to Lowery Bronsted concept, correct order of relative strength of bases follows the order

A) $CH_3COO^- > Cl^- > OH^-$
B) $CH_3COO^- > OH^- > Cl^-$
C) $OH^- > CH_3COO^- > Cl^-$
D) $OH^- > Cl^- > CH_3COO^-$

Q.10 Dissociation constant for H_2O is 10^{-14} $mole^2/dm^6$, what is the pH of 0.001 M KOH solution

A) 10^{-11}
B) 10^{-2}
C) 3
D) 11

Q.11 Which of the following in NOT correct

A) $pH = \frac{1}{\log[H^+]}$
B) $pH = \log\left[\frac{1}{H^+}\right]$
C) $[H^+] = 10^{-pH}$
D) $pH = -\log[H^+]$

Q.12 A Buffer solution having 0.09M CH_3COOH and 0.11M CH_3COONa, on adding 0.01M HCl new concentration of salt and acid in this Buffer will be

A) 0.12M CH_3COONa and 0.08M CH_3COOH
B) 0.10M CH_3COONa and 0.10M CH_3COOH
C) 0.09M CH_3COONa and 0.11M CH_3COOH
D) 0.01M CH_3COONa and 0.01M CH_3COOH

Q.13 pOH of Buffer solution, which is formed by mixing 0.1 mol/dm^3 of CH_3COOH and 1.0 mol/dm^3 of CH_3COONa pKa of acidic acid is 4.74

A) 4.74
B) 8.26
C) 5.74
D) 9.26

Q.14 Solubility of A_2Y_3 is 'y' mol/dm^3 its solubility product is

A) $6y^4$
B) $64y^4$
C) $36y^5$
D) $108y^5$

Q.15 In a solution of H_2S, HCl gas is passed indicate correct statement

A) $[H^+]$ cone will decreases
B) Solution will become enriched with S^{-2}
C) pH will increase
D) Solubility of H_2S will decrease

Q.16 Unit of specific rate constant for a first order reaction is

A) s^{-1}
B) $moldm^{-3}\ s^{-1}$
C) $molm^{-3}\ s^{-1}$
D) $moldm^{-3}$

Q.17 $3A \longrightarrow B + C$ it would be zero order reaction when

A) Rate of reaction is proportional to concentration of A
B) Rate of reaction is remains same at any to concentration of A
C) Remains unchanged at any concentration of B and C
D) Rate of reaction double of concentration of A is doubled

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Q.18	**Rate of reaction depends upon** A) Molar concentration C) Equivalent mass B) Atomic mass D) All of above	(A) (B) (C) (D)
Q.19	**Temperature dependence of rate constant (k) is term of Arrhenius equation is $K = Ae^{-Ea/RT}$ The graph is plotted between** A) log k versus 1/logT C) K versus 1/logT B) K versus T D) log k versus 1/T	(A) (B) (C) (D)
Q.20	**For a chemical reaction A ⟶ B, rate of reaction is double when concentration of A is increased four times, order of reaction for A is** A) Zero C) Two B) One D) Half	(A) (B) (C) (D) C
Q.21	**Among which of the following factor, specific reaction rate of first order reaction depends upon** A) Temperature C) Pressure B) Concentration of reactions D) Volume	(A) (B) (C) (D)
Q.22	**Equation of rate constant is $k = Ae^{-Ea/RT}$. A chemical reaction will proceed, more rapidly if there is a decrease in** A) K C) E_a B) A D) T	(A) (B) (C) (D)
Q.23	**For endothermic reaction, ΔH enthalpy of reaction, minimum value of energy of activation will be** A) less than ΔH C) More than ΔH B) Zero D) Equal to ΔH	(A) (B) (C) (D) A
Q.24	**A catalyst increases rate of reaction by** A) Decreasing C) Decreasing E_a B) Decreasing internal energy D) Increasing E_a	(A) (B) (C) (D)
Q.25	**75% of a first order reaction was completed in 32 minutes its half-life will be** 0 – 50 – 75 A) 24 min C) 8 min B) 16 min D) 64 min	(A) (B) (C) (D) C

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Q.26 Experimental data for reaction $2A + B_2 \longrightarrow 2AB$ is

#	[A]	$[B_2]$	R
1	0.50	0.50	1.6×10^{-4}
2	0.50	1.00	3.2×10^{-4}
3	1.00	1.00	3.2×10^{-4}

A) $R=K[B_2]$
B) $R=K[B_2]^2$
C) $R=K[A]^2[B]^2$
D) $R=K[A]^2[B]$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.27 For reaction $2A + B \longrightarrow 3C + D$, which one does not express reaction rate

A) $\frac{d[D]}{dt}$
B) $\frac{-d[A]}{2dt}$
C) $\frac{d[c]}{dt}$
D) $\frac{-d[B]}{dt}$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.28 Rate constant of first order reaction is 10^{-2} min^{-1}. Half period is

A) 693 min
B) 69.3 min
C) 6.93 min
D) 0.693 min

Ⓐ Ⓑ Ⓒ Ⓓ

Q.29 Rate constant of first order reaction is 6×10^{-3} s^{-1}, initial concentration is 0.10 M, rate of reaction is

A) 6×10^{-3}
B) 6×10^{-4}
C) 6×10^{-6}
D) 6×10^{-8}

Ⓐ Ⓑ Ⓒ Ⓓ

Q.30 Suitable method of determination of rate of reaction is when reactant, are in ionic form

A) Refractometric method
B) Electrical conductivity method
C) Optical Rotation method
D) Spectrometry

Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 7

UHS Topic –1-B and 2-B
F.Sc: Chapter # 1- 2nd Year

Periods and Groups
MCQs: 2+2

LEARNING OUTCOMES

PERIODS

- Variation in physical properties of 2nd and 3rd period ☐
- Atomic radius ☐
- Ionic radius ☐
- Melting point ☐
- Boiling point ☐
- Electrical conductance ☐
- Ionization energy ☐

1. GROUPS ☐

- Properties of alkaline earth metal ☐
- Properties of Halogens ☐
- Uses of halogens ☐
- Uses of noble gases ☐
- Disproportionation reactions ☐
- Reaction of alkaline earth metals with oxygen ☐
- Reactions of alkaline earth metals with water ☐
- Reaction of chlorine with NaOH ☐
- Uses of bleaching agent ☐

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Q.1	**Periodicity in properties is due to** A) Regular increase in atomic weight of elements B) Regular increase in atomic number of elements C) Periodicity in electronic configuration of elements D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	**Diagonal relationship is shown by** A) All elements with their diagonally opposite elements B) Some elements of 2^{nd} and 3^{rd} periods C) All elements of 3^{rd} and 4^{th} D) Elements of d-block	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	**A metal having electronic configuration $[Ne]3s^1$, the general formula of its oxide will be** A) M_2O C) MO_2 B) M_2O_3 D) M_2O_2	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	**The element in the 3^{rd} group and 3^{rd} period is** A) C C) P B) Co D) Al	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	**Which element have least negative 1^{st} electron affinity value among the following** A) Cs C) Mg B) N D) Al	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	**The element whose electronic configuration is $[Ne]3s^2$** A) Alkali metal C) Inert gas B) Metalloid D) Alkaline earth metal	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	**The electronic configuration of most reactive non-metal is** A) $[Ne]3s^1$ C) $[Ne]3s^2$ B) $[Ne]3p^1$ D) $[Ne]3s^2, 3p^5$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	**Atomic size decrease along the period due to** A) Increase in nuclear charge C) Increase nuclear attraction of valence electrons B) Decrease in size D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	**Lanthanide contraction is related to** A) Atomic number C) Atomic mass B) Atomic size D) Atomic energy	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	**The correct order of ionic radii is** A) $F^- > Na > Na^+ > F$ C) $Na > F^- > Na^+ > F$ B) $Na^+ > F > F^- > Na$ D) $F^- > Na > F > Na^+$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**Which statement is correct about melting and boiling point** A) Increases along the period B) Decreases along the period C) Increases up to IVA elements then decreases D) Not predictable	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.12	**Which of the following have lowest melting point in IIA group** A) Mg C) Ca B) Be D) Sr	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**The correct order of decreasing electrical conductivity is** A) Ag > Cu > Al > Au C) Ag > Cu > Au > Al B) Al > Au > Ag > Cu D) Cu > Au > Ag > Al	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**Which is incorrect about ionization energy** A) Ionization energy $\propto \frac{1}{\text{Size}}$ B) Ionization energy $\propto$ Nuclear charge C) Ionization energy $\propto \frac{1}{\text{Screening effect}}$ D) Ionization energy $\propto$ Number of shells	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**The ionization energy of N > O because of** A) Ionization energy $\propto \frac{1}{\text{Size}}$ B) N possess stable half-filled electronic configuration C) The screening effect in N > O D) N is more electronegative than O	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Which ion have maximum heat of hydration** A) Be^{2+} C) Mg^{2+} B) Cs^{2+} D) Na^{+}	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**The electron affinity of Be is similar to** A) B C) Li B) He D) Na	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Be is resistant toward complete oxidation due to** A) BeO layer C) Small size B) High charge density D) High electronegativity	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**The only alkaline earth metal that form peroxide is** A) Be C) Mg B) Ba D) Ca	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Mg react more rapidly to produce hydrogen with** A) Cold water C) Hot water B) Steam D) Ice	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**The group in which all the three states of matter observed at ordinary temperature is** A) VIIA C) IIIA B) VA D) IVA	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**The halogen occurring naturally in positive oxidation state is** A) F C) Cl B) Br D) I	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.23	**The strongest oxidizing agent among the following is** A) I C) Br B) F D) Cl	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**The maximum oxidation state that halogens can represent in their oxy acids** A) +5 C) +7 B) +3 D) -1	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**The formula of bleaching powder is** A) $Ca(OCl)Cl$ C) $CaO(OCl)$ B) $MgCl(OCl)$ D) $CaCl_2(OCl)$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**The bleaching action of bleaching power if due to** A) Chloride ion C) Chlorine B) Calcium ion D) Hypochlorite ion	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**During disproportionation reaction of Cl_2 with NaOH, the oxidation state of chlorine changes to** A) +5, -1 C) +7, -1 B) +1, -1 D) +3, -1	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**The use of chlorine is** A) Disinfectant C) Antiseptic B) Insecticide D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**The gas which is used in the weather balloon is** A) He C) Ne B) Ar D) Kr	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**Which Nobel gas is used in bactericidal lamps** A) He C) Ar B) Xe D) Kr	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 8

UHS Topic – 3-B and 4-B Transition Elements, Elements of Biological Importance
F.Sc: Chapter # 6, 4, 5, 15, 16 MCQs: 2+4

LEARNING OUTCOMES

- **TRANSITION ELEMENTS**
- **ELEMENTS OF BIOLOGICAL IMPORTANCE**

1. TRANSITION ELEMENTS

- Elements of 3d series ☐
- Electronic configuration of 3d series elements ☐
- Their variable oxidation state ☐
- Uses as catalyst ☐
- Color of transition complexes ☐

2. TRASITION COMPLEXES

- Ligand ☐
- Central metal atom ☐
- Chelates ☐
- Coordination number ☐
- Coordination sphere ☐
- Geometry of complexes ☐

1. ELEMENTS OF BIOLOGICAL IMPORTANCE

- Inertness of nitrogen ☐
- Manufacturing of ammonia by Haber's process ☐
- Nitrogenous fertilizer ☐
- Uses of Nitrogenous fertilizer ☐
- Presence of SO_2 in atmosphere ☐
- Cause of acid rain ☐

2. MANUFACTURING OF SULFURIC ACID

- By contact process ☐

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KIPS SELF ASSESSMENT TEST

Q.1 Which of the followings pairs consist of non-typical traditions elements of 3d-series
A) Ti, Cu
B) V, Ni
C) Sc, Zn
D) Fe, CO

Q.2 Which of the following pair of ions is colorless?
A) Ti^{3+}, Cu^{2+}
B) Co^{2+}, Fe^{3+}
C) Sc^{3+}, Zn^{2+}
D) Ni^{2+}, V^{3+}

Q.3 The property which is not characteristics of transition metals is
A) Variable oxidation state
B) Formation of coloured compounds
C) Tendency to from complexes
D) Natural radioactivity

Q.4 What is the shape of $Fe(CO)_5$ molecule
A) Tetrahedral
B) Octahedral
C) Trigonal bipyramidal
D) Square pyramidal

Q.5 A complex compound in which oxidation number of metal is zero
A) $[Ni(CO)_4]$
B) $K_4[Fe(CN)_6]$
C) $[Pt(NH_3)_4]Cl_2$
D) $K_3[Fe(CN)_6]$

Q.6 Which statement about the complex $K_2[Cu(CN)_4]$ is correct
A) Its name is potassium tetracyanocopper (II)
B) In this complex coordination number of central atom is two
C) Ligands attached to central atom are positive
D) Central atom is present in negative sphere

Q.7 Which one of the following is bidentate ligand
A) Cyano
B) Chloro
C) Acetato
D) Oxalato

Q.8 Among the following series of transition metal ions the one where all metal ions have $3d^2$ electronic configuration.
A) Ti^{+}, V^{4+}, Cr^{6+}, Mn^{7+}
B) Ti^{2+}, V^{3+}, Cr^{4+}, Mn^{5+}
C) Ti^{3+}, V^{2+}, Cr^{3+}, Mn^{4+}
D) Ti^{4+}, V^{3+}, Cr^{2+}, Mn^{3+}

Q.9 Which one of the following characteristics of the transition metal is associated with their catalytic activity
A) Variable oxidation state
B) Paramagnetic behavior
C) Colour of hydrated ions
D) High enthalpy of atomization

Q.10 Which of the following transition metal is used as catalyst in margarine industry
A) Mn
B) CO
C) Ni
D) Zn

Q.11 The correct ground state electronic configuration for the atom (Z=24) is?
A) [Ar] $3d^5\ 4s^1$
B) [Ar] $3d^6\ 4s^0$
C) [Ar] $3d^4\ 4s^2$
D) [Ar] $3d^5\ 4s^2$

Q.12 Which of the following conditions is /are suitable for the stability of the complex?
A) Chelation
B) Large charge on the cathode metal ion
C) Large basic nature of the ligand
D) All of these

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Q.13	In which of the following pair, the first species is more stable than second one A) Mn^{2+}, Mn^{3+} C) Sc^{2+}, Sc^{3+} B) Ti^{3+}, Ti^{4+} D) Fe^{2+}, Fe^{3+}	A B C D
Q.14	Which of following fertilizer is used in liquid form A) Ammonia C) Ammonia nitrate B) Urea D) Ammonia chloride	A B C D
Q.15	Which of following fertilizer is used in form of prills A) Urea C) Ammonia B) Ammonia nitrate D) "A" & "B"	A B C D
Q.16	Which of following fertilizer is used for all types of crops A) NH_3 C) NH_2CONH_2 B) NH_4NO_3 D) $(NH_4)_2SO_4$	A B C D
Q.17	Which of following fertilizer can't be used for paddy rice A) NH_3 C) NH_2CONH_2 B) $(NH_4)_2SO_4$ D) NH_4NO_3	A B C D
Q.18	Which fertilizer contain 82% nitrogen A) NH_3 C) NH_2CONH_2 B) $(NH_4)_2SO_4$ D) NH_4NO_3	A B C D
Q.19	Which of following fertilizer's don't make soil acidic A) $Ca(NO_3)_2$ C) KNO_3 B) $NaNO_3$ D) All of these	A B C D
Q.20	Which nitrogenous fertilizer is primarily used for explosives A) NH_4NO_3 C) NH_2CONH_2 B) NH_3 D) All of these	A B C D
Q.21	Which fertilizer is applied 6 inches below the surface of soil A) NH_4NO_3 C) NH_2CONH_2 B) NH_3 D) KNO_3	A B C D
Q.22	Addition of urea to soil is _____ reaction A) Endothermic C) Both "A" & "B" B) Exothermic D) No heat energy is involved	A B C D B
Q.23	Which one of the following set of raw material is most suitable for manufacture of urea A) CH_4, N_2, CO_2 C) H_2, CO_2, H_2O B) H_2, N_2, CO D) H_2O, N_2, H_2	A B C D A
Q.24	Which one of the following is not a sulphur gaseous pollutant A) SO_2 C) H_2S B) SO_3 D) $SOCl_2$	A B C D
Q.25	Bond energy of N_2 is A) 891 $KJmol^{-1}$ C) 941 $KJmol^{-1}$ B) 242 $KJmol^{-1}$ D) 1302 $KJmol^{-1}$	A B C D

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Q.26	**Which of the following is/are use of nitrogen gas** A) Synthesis of ammonia B) Formation of nitrogen of alkaline earth metals C) Inert atmosphere for air sensitive and water sensitive substances D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**At which conditions yield of ammonia by Haber's process is high but rate of formation is slow** A) High pressure B) Low temperature C) High temperature D) "A" and "B"	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Boiling point of ammonia is** A) 239.6 K B) 306.4 K C) 309.4 K D) 133.4°C	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Conditions to get maximum yield of SO_3** A) 400-500^{0}C B) 2 atm C) V_2O_5 catalyst D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**In Which purifying unit of contact process spray of water is used to wash gases** A) Dust remover B) Cooling pipes C) Scrubbers D) Test Box	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 9

UHS Topic – 1-C and 2-C
F.Sc: Chapter # 7 + 8 + 9

Fundamental Principles & Hydrocarbons
MCQs: 3+4

LEARNING OUTCOMES

1. FUNDAMENTAL PRINCIPLE
- classification of organic compound

2. TYPES OF BOND CLEAVAGES
- Homolytic
- Heterolytic

3. PROCESS OF CRACKING
- Steam cracking
- Catalytic cracking
- Thermal cracking

4. TYPES OF REAGENT
- Electrophile
- Nucleophile
- Free radicals

5. ISOMERISM
- Structural
- Cis-trans

6. IUPAC NAMING OF
- Alkanes
- Alkenes
- Alcohols
- Haloalkanes
- Carboxylic acid

7. ALKANES
- Combustion
- Free radical substitution reaction

8. ALKENES
- Dehydration of alcohol
- Dehydrohalogenation of alkyl halide
- Catalytic hydrogenation
- Halogenation
- Hydration of alkenes
- Addition of HBr
- Bayer's test
- Polymerization of ethene

9. BENZENE
- Structure of benzene
- Electrophilic substitution reaction of benzene
- Hydrogenation of benzene
- Side chain oxidation of toluene
- Orientation in electrophilic substitution reactions of benzene

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KIPS SELF ASSESSMENT TEST

Q.1 Molecular formula of naphthalene is
A) $C_{10}H_8$
B) C_6H_{12}
C) $C_{12}H_{12}$
D) $C_{14}H_{10}$

Q.2 Which of the following is heterocyclic compound?
A) Toluene
B) naphthalene
C) Phenol
D) Furan

Q.3 In the result of homolytic cleavage ____are produce?
A) Cations
B) Anions
C) Free radicals
D) Molecules

Q.4 In SN_1 mechanism, the C — X bond breaks in slow step by
A) Homolytically
B) Hetrolytically
C) Catalytically
D) Thermally

Q.5 Better quality gasoline can be obtain by
A) Thermal cracking
B) Catalytic cracking
C) Steam cracking
D) Both a & b

Q.6 In steam cracking, the temperature range is
A) 300°C
B) 500°C
C) 900°C
D) 1200°C

Q.7 Which of the following specie is more reactive
A) Atom
B) Molecule
C) Free Radical
D) Atom of inert gas

Q.8 Which one is not a nucleophile?
A) $AlCl_3$
B) H_2O
C) H_2S
D) SO_2

Q.9 Which of following contain isolated benzene ring
A) Diphenyl ether
B) Naphthalene
C) Anthracene
D) Phenanthrene

Q.10 C_2H_6O can show isomerism
A) Position isomerism
B) Functional group
C) Chain isomerism
D) Tautomerism

Q.11 Carboxylic acids are functional groups isomers of
A) Esters
B) Aldehydes
C) ketones
D) ether

Q.12 The compound which cannot show cis-trans isomerism
A) 2-Butene $H_3C-HC=CH-CH_3$
B) 1-Butene $H_2C=CH-CH_2-CH_3$
C) 2-pentene $H_3C-HC=CH-CH_2-CH_3$
D) 1-bromo-2-chloropropene

Q.13 IUPAC name of tartaric acid is
A) 2-hydrroxy propanoic acid
B) 2,4,6-Trinitrophenol
C) 2,4,6-Trinitrotoluene
D)2,3-Dihydroxy butane-1,4 dioic acid

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.14	**Number of sp2 hybridized in in cyclohexane**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) 0	C) 4	
	B) 6	D) 3	
.15	**Number of tertiary carbon atoms in tertiary butyl alcohol is**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) 1	C) 0	
	B) 4	D) 3	
.16	**Which is ortho-para director?**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) – Cl	C) – OH	
	B) – OR	D) All of these	
.17	**Toluene reacts with $HNO_3 + H_2SO_4$ to produces**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) o-nitrotoluene	C) 3-nitrotoluene	
	B) m-nitrotoleune	D) cannot react	
.18	**Which is strong halogenating agent?**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) I^+	C) Br^+	
	B) F^+	D) Cl^+	
.19	**Actual product formed by oxidation of toluene is**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) acetic acid	C) benzoic acid	
	B) Maleic acid	D) formic acid	
.20	**Total number of sigma bonds formed by sp^2-sp^2 overlap in benzene ring**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) 4	C) 5	
	B) 6	D) 3	
.21	**Free radicals are characterized by the presence of**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Low reactivity	C) Diamagnetism	
	B) Paramagnetism	D) Shared pair of electrons	
.22	**The chlorinated product of methane that have zero dipole moment**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) methyl chloride	C) chloroform	
	B) methylene chloride	D) carbon tetra chloride	
.23	**Number of moles of water produced by complete combustion of methane**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) 2	C) 1	
	B) 3	D) 4	

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24	**The alcohol which undergoes dehydration more easily**		(A) (B) (C) (D)
	A) Propyl alcohol	C) Iso-propyl alcohol	
	B) Neo-pentyl alcohol	D) 2-methyl-2-propanol	
25	**Polymerization of ethene follows:**		(A) (B) (C) (D)
	A) Free –radical mechanism	C) Addition of electrophile	
	B) Nucleophilic substitution	D) nucleophilic	
.26	**Which catalyst yield better quality polythene**		(A) (B) (C) (D)
	A) $Pd(BaSO_4)$/quinoline	C) $Zn+CH_3OH$	
	B) Ag_2O	D) $Al(C_2H_5)_3+TiCl_4$	
Q.27	**What is Beaeyer's reagent?**		(A) (B) (C) (D)
	A) HOX + HX	C) $Pd(BaSO_4)$/quinoline	
	B) 1% alkaline $KMnO_4$ Solution	D) Na/liq.NH_3	
Q.28	**Identify Y in the sequence** $CH_2=CH_2 \xrightarrow{HBr} CH_3CH_2Br \xrightarrow{KOH_{(aq)}} Y$		(A) (B) (C) (D)
	A) CH_3OH	C) $HOCH_2CH_2OH$	
	B) CH_3CH_2OH	D) C_2H_4	
Q.29	**Acetone and propen-2-ol are**		(A) (B) (C) (D)
	A) Positional isomers	C) Geometrical isomers	
	B) Keto-enol tautomers	D) Chain isomers	
Q.30	**The Group which activates the benzene ring**		(A) (B) (C) (D)
	A) – CHO	C) – COOH	
	B) – NH_2	D) – SO_3H	

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KIPS UNIT- 10

UHS Topic – 3,4,5-C
F.Sc: Chapter # 10,11,12

Alkyl halide, Alcohols and Phenols, Aldehyde and Ketone
MCQs: 4 + 4 + 4

LEARNING OUTCOMES

ALKYL HALIDES

1. **IMPORTENCE OF HALOALKANES**
   - CFCs,
   - Halothanes
   - CCl_4, $CHCl_3$
   - Teflon
2. **REACTION OF ALKYL HALIDES**
   - Nucleophilic substitution (SN_1,SN_2)
   - Elimination reaction (E_1, E_2)
3. **ALCOHOLS AND PHENOLS**
   - Classification of alcohols
   - Preparation of ethanol
4. **REACTION OF ALCOHOLS WITH**
   - $K_2Cr_2O_7 + H_2SO_4$
   - PCl_5
   - Na-metal
   - Iodoform Test
   - Esterification
   - Dehydration of alcohol to give alkene
1. **REACTION OF PHENOL WITH**
   - Bromine
   - HNO_3
   - NaOH
2. **RELATIVE ACIDITY OF WATER, ETHANOL AND PHENOL**
3. **ALDEHYDES AND KETONES**
   - Structure of aldehyde and ketones
   - Preparation of aldehydes and ketones by oxidation
4. **REACTIONS OF CARBONYL COMPOUNDS TO WITH**
   - 2,4 -DNPH
   - HCN
   - $NaBH_4$ or $LiAlH_4$
5. **DISTINGUISH BETWEEN ALDEHYDE AND KETONES BY**
   - Tollen's Test
   - Fehling test
6. **IODO FORM TEST**

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KIPS SELF ASSESSMENT TEST

Q.1 The hybridization of carbon atom in $\dot{C}H_3$ is

A) sp^2 C) dsp^2
B) sp^3 D) sp

Q.2 Which one of the following is poor leaving group

A) $\bar{O}R$ C) Br^-
B) I^- D) HSO_4^-

Q.3 The most reactive alkyl halide towards SN_2 reaction

A) n-pentyl halide C) n-propyl halide
B) n-butyl halide D) ethyl halide

Q.4 The primary alkyl halide among the following is

A) Isobutyl chloride C) Chlorobenzene
B) 2-methyl-2-chloropropane D) Isobutyl chloride

Q.5 $CH_3-CH_2-Cl + CN^- \xrightarrow{aq.KOH}$

A) Propane nitrile C) Ethene
B) Ethane nitrile D) No reaction takes place

Q.6 In elimination reaction during the formation of alkene reactivity of halogen in alkyl halide is in the order of

A) Cl > Br > I C) Br > Cl > I
B) I > Br > Cl D) I > Cl > Br

Q.7 One of the following which is only CFC

A) Freons C) Teflon
B) Halothane D) Chloroform

Q.8 Correct order of boiling point of alkyl halide

A) $C_2H_5Cl > C_2H_5Br > C_2H_5I$ C) $C_2H_5Cl > C_2H_5Cl > C_2H_5Br$
B) $C_2H_5I > C_2H_5Br > C_2H_5Cl$ D) $C_2H_5Br > C_2H_5I > C_2H_5Cl$

Q.9 Monomer of teflon is

A) C_2F_2 C) C_2F_6
B) C_2F_4 D) CF_3^-

Q.10 Halogen containing more than one atoms in halothane is

A) F C) Br
B) Cl D) I

Q.11 Correct order of esterification of alcohol is

A) p > s > t C) t > s > p
B) s > t > p D) all of these

Q.12 The alcohol having zero β-hydrogen are

A) n-pentyl alcohol C) neo-pentyl alcohol
B) isopropyl alcohol D) Phenol

Q.13 Carbolic acid is

A) Phenol C) Benzene
B) Toluene D) Chlorobenzene

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Q.14 The alcohol which does not undergoes dehydration

A) neo-pentyl alcohol
B) 2-pentanol
C) Pentanol
D) Iso-butyl alcohol

Ⓐ Ⓑ Ⓒ Ⓓ

Q.15 Alcohol when heated at 140°C in the presence of H_2SO_4 gives

A) Alkene
B) Ether
C) Alkyl halide
D) Alkane

Ⓐ Ⓑ Ⓒ Ⓓ

Q.16 The most acidic alcohol among the following is

A) CH_3OH
B) C_2H_5OH
C) C_3H_7OH
D) C_4H_9OH

Ⓐ Ⓑ Ⓒ Ⓓ

Q.17 The most reactive alcohol among the following when it reacts with Na

A) Primary alcohol
B) Secondary alcohol
C) Tertiary alcohol
D) All are equally reactive

Ⓐ Ⓑ Ⓒ Ⓓ

Q.18 pH of aqueous solution of phenol is

A) 5–6
B) 5–7
C) 5–9
D) 5–8

Ⓐ Ⓑ Ⓒ Ⓓ

Q.19 Correct order of stability of conjugate base is

A) $CH_3O^- > C_6H_5O^- > CH_3COO^-$
B) $CH_3OO^- > C_6H_5O^- > CH_3O^-$
C) $C_6H_5O^- > CH_3O^- > CH_3COO^-$
D) $CH_3O^- > CH_3OO^- > C_6H_5O^-$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.20 Melting point of phenol is

A) 314 K
B) 300 K
C) 273 K
D) 41 K

Ⓐ Ⓑ Ⓒ Ⓓ

Q.21 The most reactive carbonyl compound among the following is

A) HCHO
B) CH_3CHO
C) C_2H_5CHO
D) C_3H_7CHO

Ⓐ Ⓑ Ⓒ Ⓓ

Q.22 Hybridization of carbon no 3 in propanal

A) sp^2
B) sp
C) sp^3
D) dsp^3

Ⓐ Ⓑ Ⓒ Ⓓ

Q.23 The carbonyl compound which can be easily oxidized

A) HCHO
B) C_6H_5CHO
C) $C_6H_5CH_2CHO$
D) All are equally oxidized

Ⓐ Ⓑ Ⓒ Ⓓ

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Q.24 **The compound which can undergo electrophilic substitution reaction** (A) (B) (C) (D)

A) CH_3CHO C) C_6H_5CHO

B) CH_3COCH_3 D) HCHO

Q.25 **The compound which gives silver mirror with ammonical silver nitrate** (A) (B) (C) (D)

A) $C_6H_5CH_2OH$ C) $C_6H_5COCH_3$

B) C_6H_5CHO D) C_6H_6

Q.26 **The compound which reacts in a similar manner with both aldehydes and ketones** (A) (B) (C) (D)

A) HCN C) $Cu(OH)_2$

B) $Cu(OH)_2$ /NaOH D) $Ag(NO_3)$

Q.27 **Oxidation of 2-propanol gives** (A) (B) (C) (D)

A) Acetaldehyde C) Acetone

B) Formaldehyde D) Propanal

Q.28 $X + Y \xrightarrow[H_2O]{NaOH}$ **Bakelite, X and Y may be** (A) (B) (C) (D)

A) Ethanol + Methanal C) Phenol + Methanal

B) Phenol + Ethanal D) Ethanal + Methanal

Q.29 **Which of the following does not react with $NaHSO_3$** (A) (B) (C) (D)

A) Acetone C) 3-Pentanone

B) 2-Butanone D) 2-Pentanone

Q.30 $C_3H_8O \xrightarrow[H_2SO_4]{K_2Cr_2O_7} CH_3COCH_3 \xrightarrow[I_2/NaOH]{Warm} CHI_3$ (A) (B) (C) (D)

A) Propanol C) 2-Propanal

B) Methyl ethyl ether D) Ethanal

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KIPS UNIT- 11

UHS Topic – 6C + 7C
F.Sc: Chapter # 13

Carboxylic Acids & Amino Acids
MCQs: 4 + 2

LEARNING OUTCOMES

CARBOXYLIC ACIDS

1. PREPARATION OF ETHANOIC ACID
   - Oxidation of ethanol
   - Acidic hydrolysis of ethane nitrile
2. REACTION OF ETHANOIC ACID WITH
   - Salt formation
   - Esterification
   - Acid chloride formation
   - Amide formation
3. STRENGTH OF ORGANIC ACIDS RELATIVE TO CHLORO SUBSTITUTED ACID
4. RELATIVE ACIDIC STRENGTH OF CARBOXYLIC ACIDS PHENOLS AND ALCOHOLS

AMINO ACIDS

1. STRUCTURE AMINO ACIDS
2. CLASSIFICATION OF AMINO ACIDS ON THE BASIS OF R-GROUP
   - Polar
   - Non-Polar
3. CLASSIFICATION OF AMINO ACIDS
   - Acidic
   - Basic
   - Neutral
4. FORMATION OF ZWITTER IONS

PEPTIDE BOND FORMATION

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KIPS SELF ASSESSMENT TEST

Q.1	**Flavor of ethyl butyrate is** A) Banana B) Apricot C) Orange D) Pineapple	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	**Carboxylic acid in non-polar solvents exist as** A) Ions B) Molecules C) Dimers D) Polymers	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	**Carboxylic acids are weaker acid then** A) Mineral acid B) Alcohol C) Phenol D) Water	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	**The compound can't be used to prepare acid halide** A) PCl_5 B) PCl_3 C) $SOCl_2$ D) $AlCl_3$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	**Reduction of carboxylic acid in presence of HI and P yields** A) Aldehyde B) Alcohol C) Alkane D) Ketone	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	**Dilute solution of acetic acid yields** A) Vinegar B) Oil of vitrol C) Glacial acetic acid D) Malonic acid	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	**Carboxylic acid react with ammonia to give ammonium acetate. Which on heating yields** A) Amine B) Amide C) Imine D) Nitrile	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	**Strongest acid among the following is** A) Cl_3CCOOH B) ClC_2HCOOH C) $ClCH_2COOH$ D) CH_3COOH	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	**Reagent used to reduce carboxylic acid to alcohol** A) $LiAlH_4$ B) HI/P C) Zn-Hg/HCl D) N_2H_4/KOH	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	**Esterification belongs to type of reactions of carboxylic acid in which** A) H−atom of COOH is involved B) OH atom COOH is involved C) COOH is involved D) OH of alcohol is involved	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**The metal which cannot evolve hydrogen from acetic acid** A) Na B) K C) Mg D) Zn	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**Alcohol on reaction with _____ are converted into carboxylic acid** A) $NaBH_4$ B) Acidified $K_2Cr_2O_7$ C) $LiAlH_4$ D) Red P/HI	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**Carboxylic acid upon reaction with active metal can liberate** A) CO_2 B) H_2O C) H_2 D) CO	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.14	**Alkyl nitrile on hydrolysis in basic medium produce.** A) Carboxylic acid C) Salt of carboxylic acid B) Amide D) Amine	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**Acid amide are formed by reaction of acetic acid with** A) NH_3 C) $CONH_2$ B) N_2 D) $-CNH$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Total number of amino acid involved in the formation of protein synthesis** A) 20 C) 10 B) 25 D) 15	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Amino acid on treatment with nitrous acid is converted to** A) Amines C) Alcohol B) Hydroxy carboxylic acid D) Carboxylic acid	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**In the Strecker's synthesis of amino acid, The basic starting material is** A) Carboxylic acid C) Aldehyde B) Amine D) Amide	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Ninhydrin test can be used to identify** A) Polypeptide C) Alanine B) Hemoglobin D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Identify the amino acid in which secondary amine is present** A) Alanine C) Proline B) Glycine D) Valine	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**The correct ratio of acidic, basic and neutral amino acid among the following is** A) 3:2:15 C) 15:3:2 B) 2:3:15 D) 2:15:3	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**Almost all naturally occurring amino acids are** A) Aliphatic C) Beta B) Alpha D) Aromatic	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.23	**Large amino acids are joined together by** A) Condensation C) Ester linkage B) Addition D) Ether linkage	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Lysine is _____ amino acid** A) Neutral C) Basic B) Acidic D) Cyclic	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**Total no of optically active amino acid are** A) 15 C) 19 B) 16 D) 18	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**How many water molecules are eliminated during formation of penta peptide** A) 4 C) 6 B) 5 D) 7	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**The reversible reaction among the following is** A) Ester formation C) Acid amide formation B) Acid halide formation D) Acid anhydride formation	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**Sulphur containing amino acids are** A) Methionine C) Glycine B) Lycine D) Alanine	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Amino acid which does not show optical isomerism** A) Alanine C) Glycine B) Histidine D) Cystein	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**The polypeptide having 9999 amino acids will be** A) Peptide C) Protein B) Polypeptide D) Tipids	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT- 12

UHS Topic – 8C+9 C
F.Sc: Chapter # 14, 16

Macromolecule, Environmental Chemistry
MCQs: 3+2

LEARNING OUTCOMES

MACROMOLECULES

1. FORMATION AND USES OF ADDITION POLYMERS
   - Polyethene ☐
   - Polystyrene ☐
   - Polyvinylchloride ☐
2. FORMATION AND USES OF CONDENSATION POLYMERS ☐
   - Polyesters ☐
   - Polyamide
3. STRUCTURE OF PROTEINS ☐
   - Primary ☐
   - Secondary ☐
4. STRUCTURE AND FUNCITON OF NUCLEIC ACIDS ☐

ENVIRONMENTAL CHEMISTRY

1. DESCRIBE AIR POLLUTANTS
   - Primary Pollutant ☐
   - Secondary Pollutant ☐
2. ACID RAIN ☐
   - Harmful effect on building material ☐
   - Harmful effect on soil ☐
   - Harmful effect on Human beings ☐
3. OZONE
   - Presence of ozone ☐
   - Production of ozone ☐
   - Depletion of ozone ☐
4. Role of CFCs ☐

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KIPS SELF ASSESSMENT TEST

Q.1	**Addition polymerization can proceed through _____ mechanism** A) Free radical B) Anionic C) Cationic D) Nucleophilic substitution	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	**In free radical mechanism, the initiation is done by a** A) Cation B) Free radical C) Anion D) Heterolytic fission	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	**Which of the following will show addition polymerization?** A) Ethane B) Diol and Dicarboxylic acid C) Propene D) alkyl halides	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	**In which of these processes are the small organic molecules made into macromolecules?** A) Cracking of petroleum fractions B) Polymerization of ethene C) Fractional distillation of crude oil D) The hydrolysis of proteins	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	**Which of these polymers is an addition polymer?** A) Nylon 6,6 B) Terylene C) Polystyrene D) Epoxy resin	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	**The fibre which is made from acrylonitrile as monomer is** A) PVC B) Acrylic fibre C) Rayon fibre D) Polyester fibre	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	**A polymeric substance that is formed in liquid state and then hardened to a rigid solid is called** A) Nylon B) Varnish C) Plastic D) Polyamide resin	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	**Which of the following are used in coating material and give toughness, flexibility, adhesion and chemical resistance?** A) PVA B) Epoxy resins C) Acrylic resins D) Polyamides	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	**Simple proteins make _____% of the body proteins of animals** A) 50 B) 30 – 35 C) 25 – 35 D) 45 – 70	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	**Which of the following elements is not present in all the proteins?** A) Carbon B) Nitrogen C) Hydrogen D) Sulphur	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**Human body contains at least _____ different kinds of proteins** A) 100 B) 10000 C) 1000 D) None of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	**Nucleic acids were discovered first in 1868 from puss cells and in 1872 from sperm heads by** A) Schrodinger B) Staudinger C) Pauling D) F. Miescher	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**Uracil base is present in** A) DNA B) Both a and b C) RNA D) In lipids	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.14	**Which of the following is double stranded?** A) DNA B) Both a and b C) RNA D) Nucleic acids	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**A nucleotide unit consists of** A) Nitrogeneous base and sugar B) Sugar and phosphoric acid C) Nitrogeneous base, sugar and phosphoric acid D) Sulphur and phosphoric acid	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Nitrogeneous bases are the derivatives of** A) Purine B) Pyridine C) Pyrimidine D) Both a and c	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Purine includes** A) Adenine and guanine B) Adenine and thymine C) Cytosine, uracil and thymine D) Uracil and uracil	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Which one of the following is not chain growth polymer?** A) Polyamide B) PVA C) PVC D) Polystyrene	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**The residence time for the NO is _____ days and NO_2 is _____ days in the atmosphere** A) 4, 3 B) 5, 6 C) 3, 4 D) 6, 7	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**The primary pollutants are** A) CO, NO_x, SO_x B) CO, SO_x, Hydrocarbons C) CO, NO_x, Hydrocarbons D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	**Air pollution can be due to** A) CO, NO_x, SO_x B) CO, SO_x, Hydrocarbons C) CO, NO_x, Hydrocarbons D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**The major source (75%) of CO in the atmosphere is burning of fuel** A) In motor vehicles, aircraft, railways B) Of plastic bags C) Of agricultural products D) Of organometallic compounds	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.23	**Combustion of coal containing _____%S produces SO_2.** A) 1 – 5 C) 5 – 9 B) 1 – 9 D) 5 – 10	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Which of the following will cause the acid rain** A) CO_2 C) SO_2 B) NO_2 D) Both b and c	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**The normal amount for the overhead ozone is as** A) 350 kg C) 350 g B) 350 mole D) 350 DU	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**Ozone layer is present in** A) Troposphere C) Stratosphere B) Hydrosphere D) None of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**A single chloride free radical can destroy up to _____ ozone molecules** A) 100 C) 100, 000 B) 10, 000 D) 10	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**The pH range of acid rain is** A) 7 – 6.5 C) 6.5 – 6 B) 6 – 5.6 D) Less than 5	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Peroxyacetylnitrate (PAN) is an irritant to human beings and it affects** A) Eyes C) Ears B) Stomach D) Nose	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**NO and NO_2 (or NO_x) are converted to HNO_3 by _____ reactions** A) Thermal C) Photochemical B) Decomposition D) By rain	Ⓐ Ⓑ Ⓒ Ⓓ

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PHYSICS



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KIPS UNIT– 1

UHS TOPIC – 1
F.Sc: Chapter # 1

Measurement
MCQs: 2

LEARNING OUTCOMES

1. PHYSICAL QUANTITIES

- Base Quantities ☐
- Derived Quantities ☐
- Supplementary Quantities ☐
- Measurement of Physical Quantity ☐
- Ideal Standard For a Physical Quantity ☐

2. SI UNITS

- Base Unit ☐
- Derived Units ☐
- Supplementary Units ☐

3. SYMBOL AND PREFIXES

- Scientific Notation ☐
- Multiples ☐
- Sub-Multiples ☐

4. ERRORS AND UNCERTAINTY

- Cause of Errors ☐
- Random Error ☐
- Systematic Errors ☐
- Reduction of Errors ☐
- Fractional Uncertainty ☐
- Percentage Uncertainty ☐
- Assessment of Total Uncertainty in Final Result ☐

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KIPS SELF ASSESSMENT TEST

Q.1 **Identify inter disciplinary area of physics** (A) (B) (C) (D)

A) Biophysics
B) Particle physics
C) Space physics
D) General relativity

Q.2 **Physical quantity whose definition is based upon other physical quantity is** (A) (B) (C) (D)

A) Current
B) Charge
C) Time
D) Temperature

Q.3 **Identify the base quantity** (A) (B) (C) (D)

A) Solar constant
B) Charge
C) Intensity of light
D) All of these

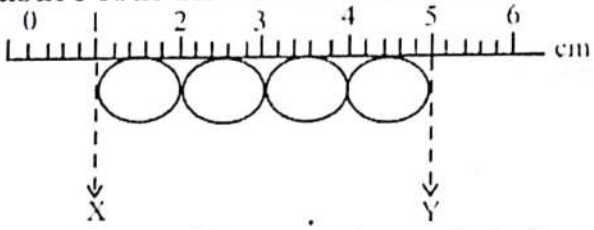
Q.4 **The units of energy per unit volume are same as those of** (A) (B) (C) (D)

A) Stress
B) Modulus of elasticity
C) Pressure
D) All of these

Q.5 **How many principle characteristics are essential for an ideal standard for measurement of a base quantity?**

A) 1
B) 2
C) 3
D) 4

Q.6 **The student attempt to measure the diameter of a steel ball by using meter rule to measure four similar ball in a row.** (A) (B) (C) (D)



The student estimate the positions on the scale to be as follows.
X (1.0 ±0.2) cm
Y(5.0 ±0.2) cm
What is the diameter of a steel ball together with its associated uncertainty?

A) (1.0 ±0.05) cm
B) (1.0 ±0.2) cm
C) (1.0 ±0.1) cm
D) (1.0 ±0.24) cm

Q.7 **Steradian is a unit of** (A) (B) (C) (D)

A) Plane angle
B) Charge
C) Solid angle
D) Resistance

Q.8 **The unit of $\frac{1}{\sqrt{LC}}$ is same as that of** (A) (B) (C) (D)

A) R
B) f
C) I
D) V

Q.9 **Which one of the following is not a unit of length** (A) (B) (C) (D)

A) Angstrom
B) Micron
C) Radian
D) Light year

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Q.10 Which of the following is not SI base quantity
A) Temperature
B) Mole
C) Length
D) Current
Ⓐ Ⓑ Ⓒ Ⓓ

Q.11 Silicon is abundantly obtained from
A) Water
B) Metal
C) Sand
D) Stones
Ⓐ Ⓑ Ⓒ Ⓓ

Q.12 The electric field is $E = \frac{F}{q}$ then the correct unit for electric field strength is
A) Kg m s^{-3} A^{-1}
B) Kg m^{-1} s^{-2} A^{-1}
C) Kg m^{-1} s^{-3} A^{-2}
D) Kg m^{-1} s^{-3} A^{-1}
Ⓐ Ⓑ Ⓒ Ⓓ

Q.13 The dimensions of decay constant is same as .
A) Time period
B) Frequency
C) Angular velocity
D) Both "B" and "C"
Ⓐ Ⓑ Ⓒ Ⓓ

Q.14 Which of the following gives the prefixes in increasing order
A) Giga, mega, micro
B) Micro, mega, pico, giga
C) Pico, micro, mega, giga
D) Giga, mega, peco, micro
Ⓐ Ⓑ Ⓒ Ⓓ

Q.15 One nanometre is equal to
A) 10^{-9} mm
B) 10^{-7} cm
C) 10^{-6} cm
D) 10^{9} cm
Ⓐ Ⓑ Ⓒ Ⓓ

Q.16 If 'h' is the height and 'g' is the acceleration due to gravity, then the unit of $\sqrt{\frac{2h}{g}}$ is the same as that of
A) Time
B) Mass
C) Volume
D) Velocity
Ⓐ Ⓑ Ⓒ Ⓓ

Q.17 The dimensional formula of PV, where P is pressure and V is volume is the same as that of
A) Work
B) Power
C) Elastic modulus
D) Pressure
Ⓐ Ⓑ Ⓒ Ⓓ

Q.18 The e.m.f induced in a coil by a changing magnetic flux is equal to the rate of change of flux with time. Which is the unit for magnetic flux?
A) kg $m^2s^{-2}A^{-1}$
B) kg $m^2s\,A^{-1}$
C) kg $m^2s^{-2}A$
D) $ms^{-2}\,A^{-1}$
Ⓐ Ⓑ Ⓒ Ⓓ

Q.19 Which of the following pairs of units are both SI base units?
A) Ampere, degree celsius
B) Coulomb, degree celsius
C) Ampere, kelvin
D) Coulomb, kelvin
Ⓐ Ⓑ Ⓒ Ⓓ

Q.20 What is the ratio of $\frac{1\mu m}{1Gm}$?
A) 10^{-3}
B) 10^{-12}
C) 10^{-9}
D) 10^{-15}
Ⓐ Ⓑ Ⓒ Ⓓ

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Q.21	**Which of the following is least multiple?** A) Deca C) Peta B) Micro D) Deci	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	**Which physical quantity have same units in all systems of units?** A) Length C) Mass B) Time D) Power	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	**In SI number of physical quantities are** A) 7 C) 3 B) 2 D) Infinite	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Choose the pair in decreasing order:** A) Centi, mili, micro C) Micro, mili, centi B) Deca, kilo, mega D) Kilo, mega, deca	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**If $x = at + bt^2$, where x is the distance in km, t is time in sec, units of b are** A) km/s C) kms B) kms^{-2} D) kms^2	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**The error in the measurement of the radius of a sphere is 1%. The error in the measurement of its volume is** A) 1% C) 3% B) 5% D) 8%	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**A stop watches accurate up to 1/100 of a second, the absolute uncertainty of the watch is** A) 0.1s C) 0.2s B) 0.01s D) 1s	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**The number of significant figures in the measurement $\lambda = 10.00300$ are** A) 7 C) 8 B) 5 D) 6	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**The equation relating pressure and density is $p = \rho gh$. How can both sides of this equation be written in term of base units?** A) $[Nm^{-1}] = kgm^{-3}[ms^{-1}][m]$ C) $[Nm^{-2}] = kgm^{3}[ms^{-2}][m]$ B) $[kgm^{-1}s^{-2}] = [kgm^{-3}][ms^{-2}][m]$ D) $[kgm^{-1}] = [ms^{-2}][m]$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**The percentage error in the measurement of mass and speed are 5% and 6% respectively. The maximum error in the measurement of momentum is:** A) 11% C) 15% B) 30% D) 90%	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS UNIT– 2

UHS TOPIC – 2
F.Sc: Chapter # 2+3

Motion and Force
MCQs: 03

LEARNING OUTCOMES

1. DISPLACEMENT AND DISTANCE ☐
2. SPEED, VELOCITY
   - Uniform velocity ☐
   - Variable velocity ☐
   - Instantaneous Velocity ☐
   - Average velocity ☐
   - Cases of average speed ☐
3. ACCELERATION
   - Uniform Acceleration ☐
   - Variable Acceleration ☐
   - Positive Acceleration ☐
   - Negative Acceleration ☐
   - Average Acceleration ☐
   - Retardation
4. VELOCITY–TIME GRAPH.
   - Uniform velocity Graph ☐
   - Increasing velocity Graph
5. NEWTON'S LAWS OF MOTION
   - 1st Law of Motion ☐
   - 2nd Law of Motion ☐
   - 3rd Law of Motion ☐
6. MOMENTUM AND LAW OF CONSERVATION OF MOMENTUM
   - Momentum and Newton's 2nd Law
7. RELATION BETWEEN THE FORCE AND RATE OF CHANGE OF MOMENTUM ☐
8. IMPULSE AND CONCEPT OF $I = F \times t = mv_f - mv_i$ ☐
9. PROJECTILE MOTION AND ITS APPLICATIONS.
   - Horizontal Projectile ☐
   - Oblique Projectile ☐
   - Time of Flight ☐
   - Height of Projectile ☐
   - Range of Projectile ☐
10. TORQUE AND USE OF TORQUE
    - Torque on a Rigid Body ☐
    - Torque due to couple ☐
11. EQUILIBRIUM, ITS CONDITIONS AND USE IT TO SOLVE PROBLEMS
    - Static Equilibrium ☐
    - Dynamic Equilibrium ☐
    - Stable Equilibrium ☐
    - Unstable Equilibrium ☐
    - Neutral Equilibrium ☐
    - 1st and 2nd Condition of Equilibrium ☐

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KIPS SELF ASSESSMENT TEST

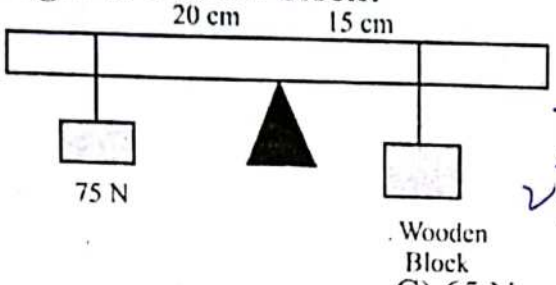
Q.1 The angle between $\vec{r} \times \vec{F}$ and $-\vec{F} \times \vec{r}$ is

A) 180°
B) 60°
C) 45°
D) 0°

Q.2 A door is opened in clockwise direction then torque is in

A) Upward direction
B) Down ward direction
C) Clockwise direction
D) Counter clockwise direction

Q.3 The diagram shows a uniform meter rod balance at its mid point. What can be the weight of wooden block?



A) 50 N
B) 100 N
C) 65 N
D) 150 N

Q.4 A body is said to be in equilibrium if it is

A) At rest
B) Moving with uniform velocity
C) Moving with variable velocity
D) Both "A" and "B"

Q.5 If second condition of equilibrium is satisfied, then the body is said to be in

A) Rotational equilibrium
B) Translational equilibrium
C) Static equilibrium
D) Dynamic equilibrium

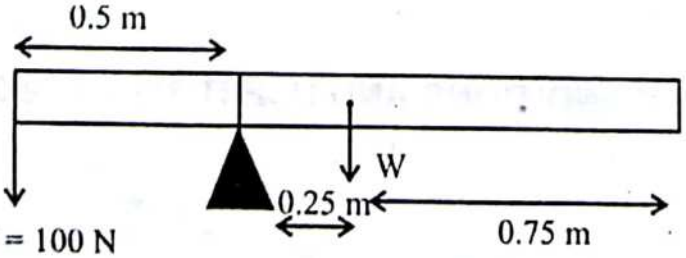
Q.6 A body of moment of inertia $I = 0.80\ kgm^2$ about a fixed axis, rotating with constant angular velocity of $100\ rad\ s^{-1}$, then torque acting on it will be

A) 80 Nm
B) Zero
C) 80Nm
D) 120Nm

Q.7 If distance of a point from pivot is '*l*' and a force 'F' in applied such that it passes from the pivot, then the torque produce in the body will be

A) F
B) *l*F sinθ
C) *l*F cosθ
D) Zero

Q.8 A rod is in equilibrium as shown in figure. What can be the weight of this rod?



A) W = 300 N
B) W = 20 N
C) W = 30 N
D) W = 200 N

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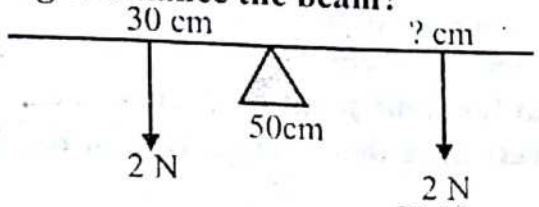
Two objects "A" and "B" are such that body "A" is rotating with uniform angular speed of 2 rad s^{-1} while "B" with uniform acceleration of 2 rad s^{-2}. If the ratio of their moment of inertia $I_A : I_B = 2:1$, then what is the ratio of τ_A and τ_B?

A) 2:1
B) Zero
C) 1:2
D) ∞

$\frac{I_A \alpha_A}{I_B \alpha_B} = \frac{2}{1}$

(A) (B) (C) (D)

A uniform beam of 1m is supported at the 50cm mark. Given that a weight of 2N hangs at the 30cm mark, at which position must another weight of 2N be hung to balance the beam?



$2 \times 20 = 2 \times ?$

A) 70cm
B) 50cm
C) 20cm
D) 30cm

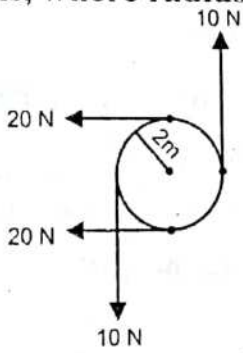
A

Which law of motion defines force?

A) 1st law
B) 3rd law
C) 2nd law
D) All of these

(A) (B) (C) (D)

Four forces acting on a circular object as shown in fig. The net resultant torque about 'O' is, where radius r=2m.



$10 \times 4 = 40$

A) Zero
B) 20 Nm
C) 40 Nm
D) 80 Nm

(A) (B) (C) (D)

A Force of 12N gives an object an acceleration of 4 m/s^2. The force required to give it an acceleration of 10 ms^{-2} is

A) 15N
B) 20 N
C) 25 N
D) 30 N

(A) (B) (C) (D)

Length of the path of a particle is equal to the magnitude of the displacement of that particle. Shape of the path possibly

A) Circle
B) Parabola
C) Arc of a circle
D) Straight line

(A) (B) (C) (D)

For which one of the following pair of projection angle the horizontal range will be the same

A) 45°,55°
B) 27°,63°
C) 58°,64°
D) 33°,85°

(A) (B) (C) (D)

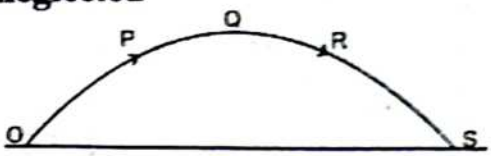
For which of the following angles range is maximum?

A) $\theta = 43°$
B) 60°
C) 30°
D) None

(A) (B) (C) (D)

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Q.17 **A projectile is lunched at point O and follows the path OPQRS, as shown. Air resistance may be neglected**



Which statement is true for the projectile when it is at the heights point Q of its path?

A) The horizontal components of the projectile's acceleration is zero.
B) The horizontal components of the projectile velocity is zero.
C) The kinetic energy of the projectile is zero
D) The momentum of the projectile is zero.

Q.18 **If two stones projected from the same point with same speed but angles $\pi/3$ and $\pi/6$ respectively have their ranges R_1 and R_2, then**

A) $R_1 = 2R_2$
B) $R_1 = R_2$
C) $R_1 = 0.5R_2$
D) $R_2 = 0.5R_2$

Q.19 **What give the value of a body acceleration?**

A) The area under its displacment graph
B) The area under its velocity-time graph
C) The gradient of its displacment time graph
D) The gradient of its velocity time graph

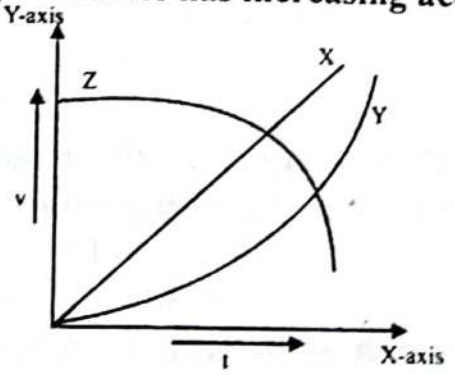
Q.20 **A football of mass 0.4kg at rest acquires a speed of 20m/sec when kicked. What is the impulse imparted to ball.**

A) 4 N. sec
B) 5 N. sec
C) 2 N sec
D) 8 N sec

Q.21 **The velocity of projectile at its maximum height is**

A) Zero
B) Minimum
C) Maximum
D) In between maximum and minimum

Q.22 **Which of the following v-t curves has increasing acceleration?**



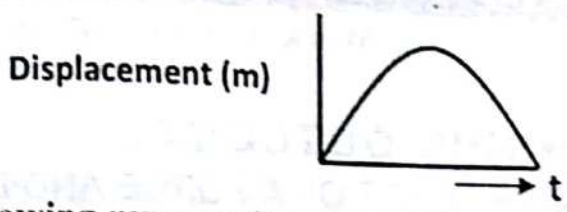
A) X
B) Z
C) Y
D) Both Y and Z

Q.23 **When a force of 5 N acts on a mass of 3 Kg for a time of 2 sec. What is the rate of change of momentum**

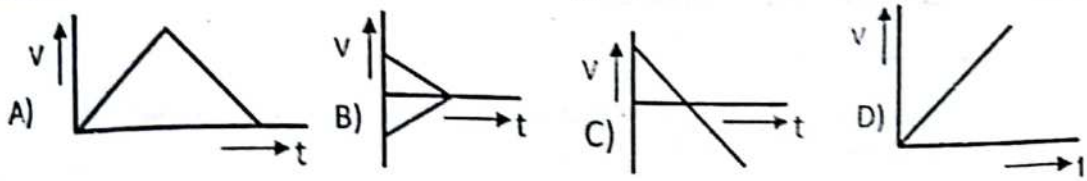
A) 5 Kg m/sec^2
B) 410 Kg m/sec^2
C) 2.5 Kg m/sec^2
D) 6 Kg m/sec^2

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Q.24 Displacement time graph of a ball thrown vertically upward is shown in figure

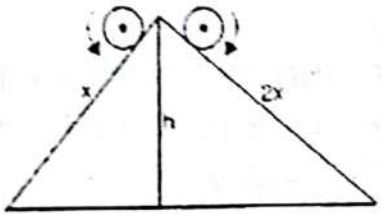


Which of the following represents v-t graph?



Ⓐ Ⓑ Ⓒ Ⓓ

Q.25 Two identical discs slip from top of two identical planes of slant length x and 2x but height h is same as shown in figure. The velocities V_1 and v_2 acquired by the discs, when they reach the bottom of the incline, are related as (neglecting all frictional effects)



A) $v_1 = v_2$
B) $V_1 = 2V_2$
C) $2v_1 = v_2$
D) none of these

Ⓐ Ⓑ Ⓒ Ⓓ

Q.26 Fuel-mass is how much percentage of the launch-mass of a rocket?
A) 50%
B) 80%
C) 95%
D) 10%

Ⓐ Ⓑ Ⓒ Ⓓ

Q.27 If the slope of a velocity time graph gradually decreases then the body is said to be moving with
A) Positive acceleration
B) Uniform velocity
C) Negative acceleration
D) None of these

Ⓐ Ⓑ Ⓒ Ⓓ

Q.28 An aeroplane is flying horizontally at a velocity v. It drops a packet from a height h. the time taken by the packet to reach the ground will be

A) $\sqrt{\frac{2h}{g}}$
B) $\sqrt{\frac{h}{2g}}$
C) $\sqrt{\frac{2v}{g}}$
D) $\sqrt{\frac{v}{h}}$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.29 A graph is drawn with force along Y-axis and time along X-axis. The area under the graph represents
A) Momentum
B) Momentum of the force
C) Couple
D) Impulse of the force

Ⓐ Ⓑ Ⓒ Ⓓ

Q.30 Two cars are moving in opposite directions with speed v. What is the magnitude of their relative velocity?
A) 0
B) v/2
C) v
D) 2v

Ⓐ Ⓑ Ⓒ Ⓓ

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UHS TOPIC – 3 Work, Energy and Power + Circular Motion

F.Sc: Chapter # 4+5 MCQs: 3+2

LEARNING OUTCOMES

1. **WORK IN TERMS OF THE PRODUCT OF A FORCE AND DISPLACEMENT IN THE DIRECTION OF THE FORCE.**

- Work done by a constant Force
- Work done by variable Force
- Work done by Gravitational Force

2. **EQUATION OF $K.E = \frac{1}{2}mv^2$ AND $P.E = mgh$**

- Basic Form of Energy
- Work Energy Principle
- Different Formulae of K.E and P.E

3. **INTERCONVERSION OF K.E AND P.E IN GRAVITATIONAL FIELD**

4. **POWER IN TERMS OF WORK DONE PER UNIT TIME AND USE POWER AS PRODUCT OF FORCE AND VELOCITY**

- Average Power
- Instantaneous Power
- Applications of $P = F.v$ and $P = \frac{W}{t}$

5. **CIRCULAR MOTION**

- Angular displacement
- Angular velocity
- Relation between angular and linear velocity

6. **CENTRIPETAL FORCE**

- Explanation and Applications of $F = mr\omega^2$, $F = \frac{mv^2}{r}$

7. **CENTRIPETAL ACCELERATION EQUATIONS**

- Explanation and Applications of $a = r\omega^2$ and $a = \frac{v^2}{r}$

8. **GEOSTATIONARY ORBITS**

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Q.1	Slope ... equal to A) Force B) Velocity C) Power D) Energy	(A) (B) (C) (D)
Q.2	K.E of an object of 2kg having velocity $(\cos\alpha\hat{i}+\sin\alpha\hat{j})$ ms^{-1} will be A) 2J B) 1J C) $(2\cos\alpha)$J D) $(2\sin\alpha)$J	(A) (B) (C) (D)
Q.3	Light and heavy bodies have equal kinetic energies. Which one has the greater momentum? $\frac{P_1^2}{P_2^2}=\frac{m_1}{m_2}$ m_1^2 A) Heavy bodies B) Light bodies C) Both a and b D) None	(A) (B) (C) (D)
Q.4	The two bodies with masses m_1 and m_2 have equal kinetic energies. If p_1 and p_2 are their respective momenta then the ratio between p_1 and p_2 is A) $m_1:m_2$ B) $m_2:m_1$ C) $m_1^2:m_2^2$ D) $\sqrt{m_1}:\sqrt{m_2}$	(A) (B) (C) (D)
Q.5	A force of 6N act horizontally on a stationary mass of 2kg for 4s. The kinetic energy in joule is $\frac{1}{2}(2)(12)^2$ $F=ma$ $6=2(a)$ $a=\frac{v}{t}$ $3=\frac{v}{4}$ $v=12$ A) 12 B) 144 C) 72 D) 48	(A) (B) (C) (D) B
Q.6	If the velocity of a body becomes half, the kinetic energy of body will becomes A) One fourth B) Four times C) Double D) Half	(A) (B) (C) (D)
Q.7	In a gravitational field when work done by gravity is negative then A) P.E increases B) P.E remains same C) P.E decreases D) none	(A) (B) (C) (D)
Q.8	Which of the following work is greater A) + 100J B) - 100 J C) 0 J D) Both A and B are equal	(A) (B) (C) (D)
Q.9	Angular speed of a particle increases from 2rads^{-1} to 4 rads^{-1} across any two diametrically opposite positions. Its angular acceleration will be? A) 6 rads^{-2} B) $\frac{6}{\pi}$ rads^{-2} C) $\frac{\pi}{6}$ 5rads^{-2} D) π rads^{-2}	(A) (B) (C) (D) B
10	When a body moves in a circle, the angle between its velocity v and angular velocity ω is always A) 0° B) 180° C) 360° D) 90°	(A) (B) (C) (D)

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Q.11 The moment of inertia of a flywheels are 4 kg m^2. A torque of 10 Nm is applied on it. The angular acceleration produced will be

A) 25 rad/s^2
B) 0.25 rad/ s^2
C) 2.5 rad/ s^2
D) Zero

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Q.12 The ratio of angular frequency and linear frequency is

A) 2 π
B) π
C) $1/\pi$
D) $\pi/2$

● Ⓑ Ⓒ Ⓓ

Q.13 Which statement about geostationary orbit is false?

A) A geostationary orbit must be directly above the equator
B) All satellite in a geostationary orbit must have the same masses
C) The period of geostationary orbit must be 24 hours.
D) There is only one possible radius for a geostationary.

Ⓐ Ⓑ Ⓒ ●

Q.14 Geo stationary satellite remains.

A) Stationary
B) Appears to remain stationary
C) Both "a" & "b"
D) None of them

Ⓐ ● Ⓒ Ⓓ

Q.15 A body is moving in a circular path with constant speed. The magnitude of tangential and centripetal acceleration are

	Tangential Acceleration	Centripetal Acceleration
A)	r v^2	0
B)	0	0
C)	0	$\frac{V^2}{r}$
D)	$\frac{V^2}{r}$	$\frac{v^2}{r}$

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Q.16 A body rotates with uniform speed in a circle of radius r and takes time T to complete one revolution. What are the magnitudes of the angular velocity ω, the linear velocity v and the acceleration a ?

	Angular velocity, ω	Linear velocity, v	Acceleration, α
A)	$\frac{1}{T}$	$\frac{4\pi r}{T}$	$\frac{2\pi r}{T^2}$
B)	$\frac{2\pi}{T}$	$\frac{2\pi r}{T}$	$\frac{2\pi r}{T^2}$
C)	$\frac{2\pi}{T}$	$\frac{2\pi r}{T}$	$\frac{4\pi^2 r}{T^2}$
D)	$\frac{2\pi}{T}$	$\frac{4\pi r}{T}$	$\frac{4\pi^2 r}{T^2}$

Ⓐ ● Ⓒ Ⓓ

Q.17 A particle revolves round a circular path with a constant speed. The acceleration of the particle is

A) Along the circumference of the circle
B) Along the tangent
C) Along the radius
D) Zero

Ⓐ Ⓑ Ⓒ Ⓓ

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Q.18 For a particle moving in uniform circular motion
A) Velocity is transverse and acceleration is radial
B) Velocity is radial and acceleration is transverse
C) Both velocity and acceleration are radial
D) Both velocity and acceleration are transverse

Q.19 The force which can do no work on the body on which it acts:
A) Frictional force
B) Gravitational force
C) Elastic force
D) Centripetal force

Q.20 The acceleration that is only due to change in direction of motion only is
A) Linear
B) Tangential
C) Angular
D) Centripetal

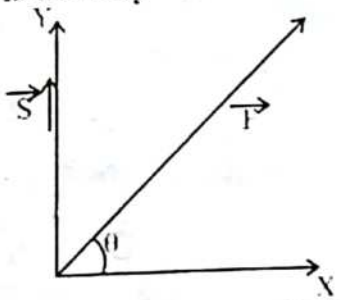
Q.21 The time taken by an engine of power 10 kW to lift a mass of 200 kg to a height of 40 m is ($g = 10\ ms^{-2}$)
A) 2 sec
B) 8 sec
C) 4 sec
D) 16 sec

Q.22 The angle between linear velocity and angular velocity of a rotating body is
A) 0°
B) 180°
C) 90°
D) 360°

Q.23 The time period of Geo-stationary satellite is
A) 48 hours
B) 12 hours
C) 24 hours
D) 60 hours

Q.24 A body is moving in a circle of radius (r) with a variable speed, the acceleration of the body is:
A) Centripetal acceleration
B) Angular acceleration
C) Tangential acceleration
D) All of the above

Q.25 If a body move along y-axis due to the application of force as shown in the figure then work is done by



A) $F\sin\theta$
B) F_x
C) $F\cos\theta$
D) Both "B" & "C" are correct

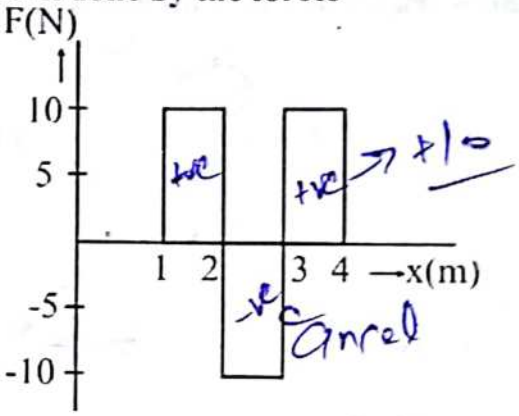
Q.26 A force "F_1" acts on a body through distance "S_1" in the direction of motion and does work "W_1", similarly another force "F_2" acts on same body through distance "S_2" but in opposite to the direction of motion and does work "W_2". Now if $F_1 = F_2$ and $S_1 = S_2$ then which statement is correct
A) $W_1 > W_2$
B) $W_1 = W_2$
C) $W_2 < W_2$
D) $W_1 = W_2 = 0$

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Q.27 A point on the rim of a wheel 4 m in diameter has a velocity of 1600 cm s^{-1}. The angular velocity of the wheel is

A) 2 rad s^{-1}
B) 4 rad s^{-1}
C) 6 rad s^{-1}
D) 8 rad s^{-1}

Q.28 The figure shows the force distance curve of a body moving along a straight line. The work done by the forces



A) 10J
B) 30 J
C) 20 J
D) 40 J

Q.29 The wounded spring of a clock possesses:

A) kinetic but no potential energy
B) potential but no kinetic energy
C) both potential and kinetic energy in equal amounts
D) neither potential nor kinetic energy

Q.30 An engine pump out 50 kg of water. If the water comes out vertically upwards with a velocity of 20 m/s. The power of engine is (take g= 10 m s^{-2})

A) 10 KW
C) 20 kW
D) 1000 W
D) 10 MW

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LEARNING OUTCOMES

OSCILLATION

1. SIMPLE HARMONIC MOTION WITH EXAMPLES

- Mass Spring System
- Instantaneous Displacement and Amplitude of vibration
- Amplitude
- Frequency
- Angular frequency
- Phase difference.
- Time period in terms of both frequency and angular frequency

2. SHM AND UNIFORM CIRCULAR MOTION

- Use of equations $x = x_o \sin \omega t, v = v_o \cos \omega t,\ v = \pm\omega\sqrt{x_o^2 - x^2},\ a = -\omega^2 x$
- Phase

3. MOTION OF SIMPLE PENDULUM IS SIMPLE HARMONIC AND USE THE RELATION $T = 2\pi\sqrt{\frac{l}{g}}$

- Second Pendulum
- Pendulum in a Lift
- Pendulum on Moon

4. INTERCHANGE OF KINETIC ENERGY AND POTENTIAL ENERGY DURING SIMPLE HARMONIC MOTION

5. FREE, FORCED AND DAMPED OSCILLATIONS WITH PRACTICAL EXAMPLES

6. CONCEPT OF RESONANCE, ITS ADVANTAGES AND DISADVANTAGES.

WAVES

- Progressive waves and use the relation $v = f\lambda$
- Transverse and longitudinal waves.
- Stationary waves and determine the wavelength of sound in air columns for open and closed pipes and in stretched string using stationary waves.
- Describe Doppler's Effect and its causes.
- Recognize the application of Doppler's Effect.

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KIPS SELF ASSESSMENT TEST

Q.1 A particle executing S.H.M of period 4s. Then time taken by it to move from mean position to half the amplitude is:

A) $\frac{1}{3}$sec
B) $\frac{1}{\sqrt{5}}$sec
C) $\frac{2}{3}$sec
D) 4sec

Ⓐ Ⓑ Ⓒ Ⓓ

Q.2 In order to double the period of simple pendulum:

A) Length should be double
B) Mass should be doubled
C) Mass should be quadrupled
D) Length should be quadrupled

Ⓐ Ⓑ Ⓒ Ⓓ

Q.3 A source of sound wave emits wave of frequency "f". If "v" is speed of sound waves, then what will be wavelength of the waves

A) $\frac{v}{f}$
B) $\frac{v-u}{f}$
C) vf
D) (v – u)f

Ⓐ Ⓑ Ⓒ Ⓓ

Q.4 Doppler's effect does not depend upon:

A) Actual frequency of wave
B) Velocity of the source
C) The distance of source from listener
D) Velocity of the observer

Ⓐ Ⓑ Ⓒ Ⓓ

Q.5 A body performing simple harmonic motion has a displacement x given by the equation x = 30 sin50t, where time in seconds. What is the frequency of oscillation?

A) 0.020 Hz
B) 0.13 Hz
C) 8.0 Hz
D) 30 Hz

Ⓐ Ⓑ Ⓒ Ⓓ

Q.6 Time taken by a S.H.O of time period 'T' to move from the mean position to the half of amplitude

A) $\frac{T}{4}$
B) $\frac{T}{8}$
C) $\frac{T}{12}$
D) $\frac{T}{6}$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.7 A spring of force constant 'K' is cut into two pieces, such that one piece has double the length of the other. The longer piece will have a force constant:

A) $\frac{2}{3K}$
B) $\frac{3K}{2}$
C) $3K$
D) $2K$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.8 Time period of mass spring system executing S.H.M depends upon:

A) Mass of system
B) Force constant
C) Amplitude
D) Both (A) and (B)

Ⓐ Ⓑ Ⓒ Ⓓ

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Q.9 A train is moving with a constant speed is along a circular track. A siren in its engine is emitting a sound of frequency f, if $u = \frac{v}{10}$, where v is the speed of sound, the apparent frequency of sound as heard by passenger at rear end of train is:

A) $\frac{9f}{10}$

B) $\frac{9f}{11}$

C) $\frac{11}{10f}$

D) f

Q.10 A particular wavelength received from a galaxy is measured on earth and is found to be 5% more than that its wave length on earth. Hence galaxy is

A) Moving towards earth

B) Stationary with respect to earth

C) Going away from earth

D) None of these

Q.11 The acceleration of a projection on the diameter for a particle moving along a circle is

A) $\omega^2 x$

B) ωx^2

C) ωx

D) ω^2/x

Q.12 What should be the length of simple pendulum whose period is 6.28 second at a place when $g=10 m/s^2$

A) 9.8 m

B) 10.8 m

C) 6.25 m

D) 10 m

Q.13 The force responsible for the vibratory motion of the simple pendulum is(where θ is angle of string with vertical)

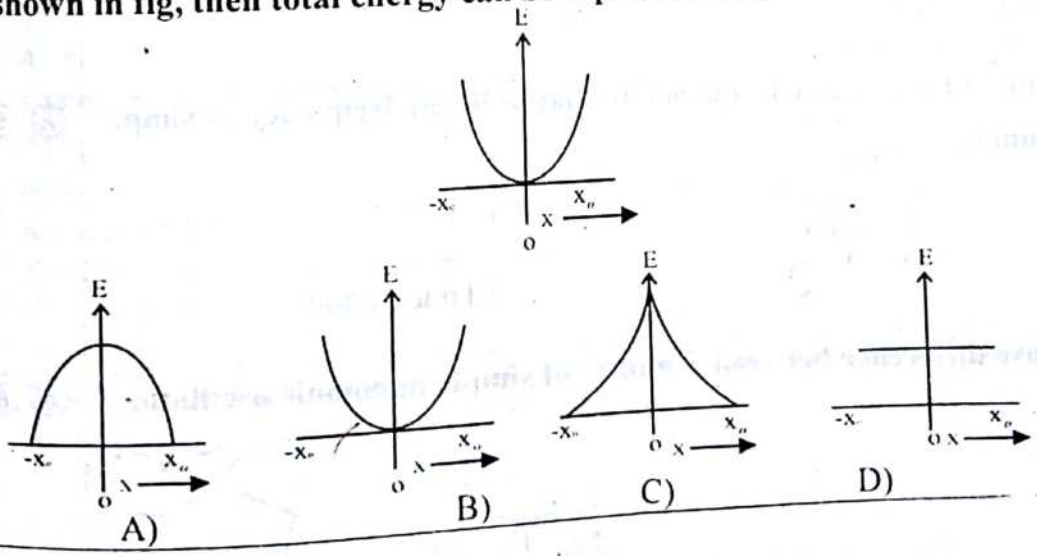
A) mg cos θ

B) mg tan θ

C) mg sin θ

D) mg

Q.14 Potential energy of mass spring system w.r.t displacement in SHM is shown in fig, then total energy can be represented by



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Q.15 A body perform SHM, with period 0.063s the maximum speed is 3m/s. What are values of amplitude and angular frequency (rad/second) is;

A) $X_{,,} = 0.03m, \omega = 100$

B) $X = 3.3m, \omega = 100$

C) $X_{,} = 0.19, \omega = 16$

D) $X_{,,} = 5.3m, \omega = 16$

Q.16 What is the period of mass spring system in SHM if the ratio of mass to spring constant is $1/4$

A) π

B) 4π

C) 2π

D) $\frac{1}{\pi}$

Q.17 The maximum velocity of vibrating mass spring system is equal to

A) $x_o\sqrt{\frac{m}{k}}$

B) $x_o\sqrt{\frac{k}{m}}$

C) $\sqrt{\frac{x_o k}{m}}$

D) $\sqrt{\frac{x_o m}{k}}$

Q.18 In a SHM, the energy of the system

A) Is independent of the amplitude
B) Is inversely proportional to the amplitude
C) Is directly proportional to the amplitude
D) Is proportional to the amplitude squared

Q.19 A particle executing S.H.M. while passing through the mean position, has:

A) Maximum K.E and maximum P.E
B) Minimum K.E and maximum P.E
C) Maximum K.E and zero P.E
D) Zero K.E and maximum P.E

Q.20 The ratio of the angular frequency to that of linear frequency of simple pendulum is:

A) 1

B) $\frac{1}{2\pi}$

C) 2π

D) Time period

Q.21 The phase difference between $\vec{v}$ and $\vec{a}$ of simple harmonic oscillator is

A) 40°

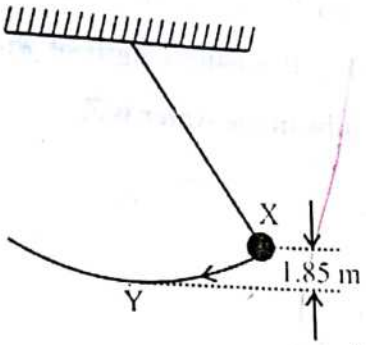
B) 45°

C) 90°

D) 180°

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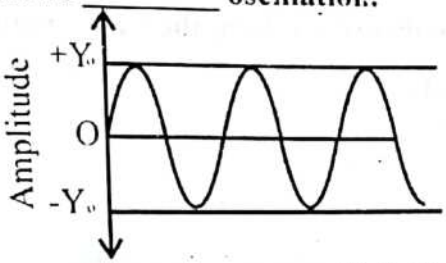
Q.22 A simple pendulum consists of a 2.0 kg mass attachment to a string. It is released from rest at X as shown. Its speed at the lowest point Y is about:



A) 0.90 ms^{-1}
B) 3.6 ms^{-1}
C) $\sqrt{3.6} ms^{-1}$
D) 6.0 ms^{-1}

Ⓐ Ⓑ Ⓒ Ⓓ

Q.23 Variation of amplitude w.r.t time for an oscillating object is shown in the fig: The graph shows _____ oscillation.



A) Damped
B) Un-damped
C) Critical
D) Heavily damped

Ⓐ Ⓑ Ⓒ Ⓓ

Q.24 A closed organ pipe and an open organ pipe have their first overtone identical in frequency. Their lengths are in ratio
A) 3:4
B) 2:3
C) 1:2
D) 3:5

Ⓐ Ⓑ Ⓒ Ⓓ

Q.25 The frequency of the fundamental mode of open ends organ pipe is 400 Hz. If one end of pipe is closed the fundamental frequency will be
A) 800 Hz
B) 400 Hz
C) 600 Hz
D) 200 Hz

Ⓐ Ⓑ Ⓒ Ⓓ

Q.26 A stretched string of length ℓ, fixed at both ends can sustain stationary waves of wavelength λ given by (n = number of antinodes)
A) $\lambda = \ell/2n$
B) $\lambda = 2n\ell$
C) $\lambda = 2n\ell$
D) $\lambda = 2\ell/n$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.27 A sonometer wire 100cm in length has a fundamental frequency of 330 Hz. The velocity of propagation of waves along the wire is
A) 115m/sec
B) 660m/sec
C) 330 m/sec
D) 990m/sec

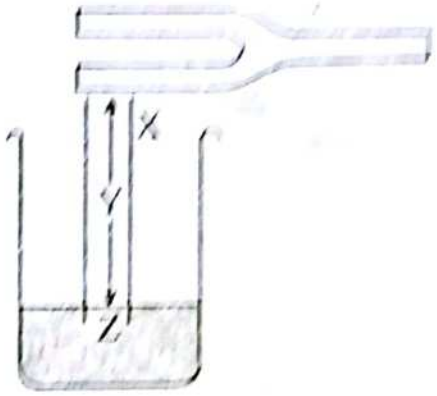
Ⓐ Ⓑ Ⓒ Ⓓ

Q.28 The fundamental frequency of a closed organ pipe is 50 Hz. The frequency of second over tone is
A) 100 Hz
B) 150 Hz
C) 200 Hz
D) 250 Hz

Ⓐ Ⓑ Ⓒ Ⓓ

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Q.29 A narrow diameter tube X is held with its lower end immersed in water. The level of the water is adjusted for maximum sound while a vibrating tuning fork is held over the tube. Then the length of the tube above the water is Y and the length of the tube in the water is Z.



If fundamental frequencies only are involved, the wavelength of the sound in the air will be approximately

A) 2Y
B) 2Z
C) 4Y
D) 4Z

Q.30 The fundamental frequency of a sound source is 256 Hz. Frequency of its first harmonic is

A) 128 Hz
B) 256 Hz
C) 512 Hz
D) 64 Hz

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KIPS UNIT – 5

UHS TOPIC – 7
F.Sc: Chapter # 9+10

Light
MCQs: 2

LEARNING OUTCOMES

1. LIGHT

- Wave front ☐
- Huygen's Principle ☐
- Interference of Light ☐
- Constructive Interference ☐
- Destructive Interference ☐

2. YOUNG'S DOUBLE SLIT EXPERIMENT

- Constructive Interference ☐
- Destructive Interference ☐
- Position of Bright Fringe ☐
- Position of Dark Fringe ☐
- Fringe Spacing ☐

3. DIFFRACTION OF LIGHT

- Diffraction Grating ☐
- Solve problems using the formula $d \sin\theta = n\lambda$ ☐

4. PRINCIPLE OF OPTICAL FIBER

- Total Internal Reflection ☐
- Continuous Refraction ☐
- Refractive Index ☐

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KIPS SELF ASSESSMENT TEST

Q.1 A single slit diffraction pattern is obtained using a beam of red light. What happens if the red light is replaced by blue light?

A) No change in diffraction pattern
B) Diffraction fringes become narrower and crowded together
C) Diffraction fringes become broader and farther apart
D) Diffraction pattern disappears

Q.2 How is the interfering pattern affected if the Young's double slit experiment was performed in still water and then in air?

A) Fewer fringes will be visible
B) Fringes will be broader
C) Fringes will be narrower
D) Fringes will disappear

Q.3 When a light wave travel from air into glass, which will change:

A) Wavelength
B) Speed
C) Frequency
D) Both "A" and "B"

Q.4 Index of refraction of diamond is 2.0. Velocity of light in diamond in cm/s is approximately.

A) 6×10^{8}
B) 1.5×10^{8}
C) 2×10^{8}
D) 1.5×10^{10}

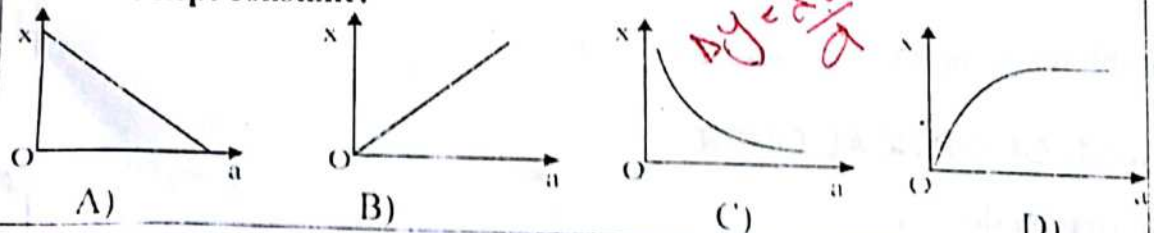
Q.5 The principle of YDSE is based on the division of ____

A) Wave front
B) Frequency
C) Amplitude
D) Spee

Q.6 The property of bending of light around an obstacle and spreading of light waves into geometric shadow of an obstacle is called

A) Diffraction
B) Polarization
C) Interference of light
D) Quantization of light

Q.7 A double-slit interference experiment uses coherent monochromatic light. Which graph shows how the distance x between fringes varies with slit separation a, when the distance from the double slits to the screen is kept constant?



Q.8 n object gets closer to the focal point of a converging lens from infinity, it's image

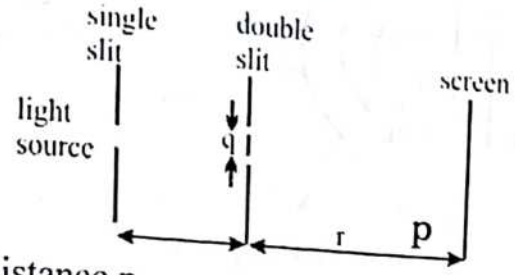
A) Becomes smaller
B) Remains of the same size
C) Gets farther from the lens
D) Gets closer to the lens

Q.9 Which of the following phenomenon is used in optical fibers for signal transmission

A) Scattering
B) Reflection
C) Refraction
D) Total internal reflection

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Q.10 **A teacher sets up the apparatus shown to demonstrate a two slit interference pattern on the screen. The teacher wishes to increase the fringe spacing. Which change to the apparatus will increase the fringe spacing?**



$\Delta y = \frac{\lambda L}{d}$

A) Decreasing the distance p
B) Decreasing the distance r
C) Decreasing the distance q
D) Decreasing the wavelength of the light

(A) (B) (C) (D)

Q.11 **Total internal reflection of light is possible when light enters from**

A) Air to glass
B) Vacuum to air
C) Air to water
D) water to air

(A) (B) (C) (D)

Q.12 **When viewed in the white light, soap bubbles show colors because of:**

A) Interference
B) Scattering
C) Diffraction
D) Dispersion

(A) (B) (C) (D)

Q.13 **A line normal to the wavefront, showing the direction of propagation of light is called**

A) Beam of light
B) Both "A" and "C"
C) Ray of light
D) None of these

(A) (B) (C) (D)

Q.14 **The distance between the plane of the atoms is 0.30nm. What will be the wavelength of X-rays at angle θ=30° for 1st order of reflection**

A) $\lambda = 0.60\,nm$
B) $\lambda = 0.30\,nm$
C) $\lambda = 0.20\,nm$
D) $\lambda = 0.90\,nm$

$2(0.30\times 10^{-9}) \times \frac{\sqrt{3}}{2} = \lambda$

(A) (B) (C) (D)

Q.15 **In Young's experiment, fringe spacing is**

A) $\frac{\lambda}{Ld}$
B) $\frac{\lambda L}{d}$
C) $\frac{d}{\lambda L}$
D) $\frac{L}{\lambda d}$

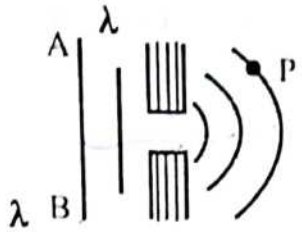
(A) (B) (C) (D)

Q.16 **Position of the mth dark band be written as**

A) $m\frac{L\lambda}{d}$
B) $(2m+1)\frac{\lambda}{2}$
C) $m\lambda$
D) $\left(\frac{2m+1}{2}\right)\frac{L\lambda}{d}$

(A) (B) (C) (D)

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.17	A monochromatic plane wave of speed 'c' and wavelength λ diffracted at small angle. The time during which a portion of wave AB reaches at 'p' will be  A) $\frac{4\lambda}{c}$ C) $\frac{\lambda}{c}$ B) $\frac{4\lambda}{2c}$ D) $\frac{2\lambda}{c}$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	Two monochromatic waves of the same wavelength are traveling through a medium. They can interfere destructively, provided their path difference is: A) λ C) 2λ B) $\frac{3\lambda}{2}$ D) 5λ	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	When a ray of light enter from glass to air A) Its frequency increases C) Its frequency decreases B) Its wavelength increases D) Its wavelength decreases	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	In YDSE, the separation between the slits is doubled and the distance between the slits and screen is halved. The fringe width become A) One fourth C) Double B) Half D) Quadruple	Ⓐ Ⓑ Ⓒ Ⓓ
Q.21	In the Young's double slit experiment the separation between the slits is halved and the distance between the slits and the screen is halved. The fringe width is _____ A) Halved C) Doubled B) Unchanged D) Quadrupled	Ⓐ Ⓑ Ⓒ Ⓓ
Q.22	The colour of sky is blue due to A) Scattering C) Polarization B) Total internal refection D) Reflection	Ⓐ Ⓑ Ⓒ Ⓓ
Q.23	Monochromatic light of wavelength λ is incident normally on a diffraction grating with the grating element d. At which angle with the normal to the grating is 2nd order diffracted beam observed? A) $\sin^{-1}\frac{2\lambda}{d}$ C) $\sin^{-1}\frac{d}{\lambda}$ B) $\sin^{-1}\frac{\lambda}{2d}$ D) $\sin^{-1}\frac{2d}{\lambda}$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	In YDSE the process taking place was A) Interference C) Reflection B) Diffraction D) Both A and B	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.25	**A two-slit arrangement is set up to produce interference fringes on a screen. The fringes are too close together for convenient observation when a monochromatic source of violet light is used. In which way would it be possible to increase the separation of the fringes?** A) Decrease the distance between the screen and the slits B) Increase the distance between the two slits C) Increase the width of each slit D) Use a monochromatic source of red light	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**In the diffraction of x-rays from crystal by Bragg's law, the condition for constructive interference is given by** A) $d\sin\theta = n\lambda$ B) $2d\sin\theta = n\lambda$ C) $d\sin\theta = 2n\lambda$ D) $2d\sin\theta = 2/\lambda$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**In YDSE if one of the slits is covered up with cellophane paper then** A) Bright fringes become more bright while dark become more dark B) Bright fringes become dark and dark become bright C) Bright fringes become less bright and dark become less dark D) No interference will take place	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**To get order of the spectra using diffraction grating, we use the relation** A) $n = \frac{\sin\theta}{\lambda}$ B) $n = \frac{\sin\theta}{d\lambda}$ C) $n = \frac{\sin\theta}{2\lambda}$ D) $n = \frac{d\sin\theta}{\lambda}$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**The twinkling of stars is due to** A) Scattering of light B) Uniform density of atmosphere C) Diffraction of light D) Non-uniform density of atmosphere	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**The fringe spacing depends upon** A) Wavelength of light B) Distance of screen from the slit C) Separation between the slits D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ

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LEARNING OUTCOMES

1. KINETIC THEORY OF GASES

- Pressure of a gas
- Derivation of the relation $PV = \frac{Nm < v^2 >}{3}$
- Interpretation of Temperature
- Derivation of Boyl's law
- Derivation of Charles Law
- Solve problems using the equation of state for an ideal gas as PV = nRT
- Compare $PV = \frac{Nm < v^2 >}{3}$ with PV = NkT and prove that <K.E> $\propto$ T for a single molecule

2. INTERNAL ENERGY

- Internal energy as a State Function
- Work and Heat

3. 1ST LAW OF THERMODYNAMICS $\Delta U = Q - W$

- Isothermal Process
- Adiabatic Process
- Isochoric Process
- Isobaric Process

4. MOLAR SPECIFIC HEAT OF A GAS

- Specific heat at constant pressure
- Specific heat at constant volume
- Heat capacity

5. ABSOLUTE ZERO AND THERMODYNAMIC SCALE OF TEMPERATURE.

- Kelvin Scale
- Degree Celsius Scale
- Degree Fahrenheit Scale
- Interconversion of Temperature Scale

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KIPS SELF ASSESSMENT TEST

Q.1 **The first law of thermodynamics is concerned with the conservation of:**

A) Number of molecules
B) Energy
C) Number of moles
D) Temperature

Q.2 **A difference of temperature of 25°C is equivalent to difference of**

A) 45 °F
B) 49 °F
C) 47 °F
D) 48 °F

Q.3 **The molecules of an ideal gas at thermodynamics (absolute) temperature T have a root-mean-square speed c_{rms}. The gas is heated to temperature 2T. What is the new root-mean-square speed of the molecules?**

A) $\sqrt{2}\, c_{rms}$
B) $2\, c_{rms}$
C) $2\sqrt{2}\, c_{rms}$
D) $4\, c_{rms}$

Q.4 **Internal energy is a unique function of a state because increase in internal energy:**

A) Does not depend upon path followed
C) Depend upon path followed
B) Corresponds to an adiabatic process
D) Corresponds to an isothermal process

Q.5 **The average K.E of hydrogen molecules at 300 K is 'E'. At same temperature K.E of oxygen molecules will be:**

A) $\frac{E}{16}$
B) E
C) $\frac{E}{4}$
D) $4E$

Q.6 **Which statement about the first law of thermodynamics is correct?**

A) The heating of a system equal to the increase of its internal energy plus the work done on the system.
B) The increase in the internal energy of system equal the heating of the system plus the work done by the system
C) The increase in the internal energy of a system equal the heating of the system minus the work done by the system
D) The work done on a system equals the increase of its thermal energy plus the heating of the system

C

Q.7 **Temperature of an ideal gas is increased from 120 K to 480 K. If at 120 K rms speed is 'v' then at 480k , it will:**

A) 2v
B) 4 v
C) $\frac{v}{2}$
D) $\frac{v}{4}$

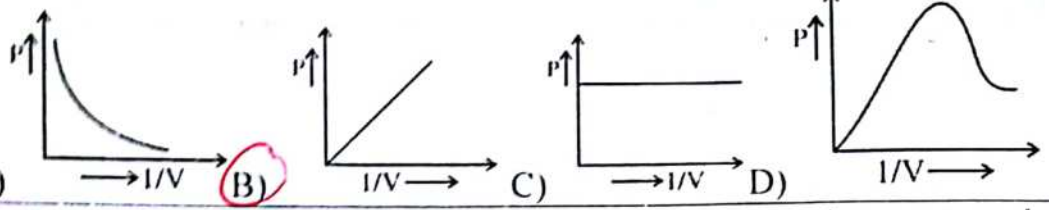
$\frac{V_1^2}{V_2^2} = \frac{T_1}{T_2} = \frac{120}{480}$

$4 V_1^2 = V_2^2$

$2 V_1 = V_2$

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Q.8 The graph between p and 1/V is at constant temperature



Ⓐ Ⓑ Ⓒ Ⓓ

Q.9 Four molecules have speeds of 2 kms^{-1}, 3 kms^{-1}, 4 kms^{-1} and 5 kms^{-1}. The rms speed of these molecules in kms^{-1} is

A) $\frac{\sqrt{54}}{4}$

B) $\frac{\sqrt{54}}{2}$

C) 3.5

D) $3\sqrt{3}$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.10 The value of absolute zero on Kelvin scale is

A) 0 k

B) –27 k

C) 273 k

D) 13 k

Ⓐ Ⓑ Ⓒ Ⓓ

Q.11 If amount of heat given to a system be 35J and then amount of work done by the system be +15J, then change in the internal energy of the system is:

A) –50J

B) –20J

C) +20J

D) 50J

Ⓐ Ⓑ Ⓒ Ⓓ

Q.12 During adiabatic expansion of two moles of a gas, the change in internal energy was found to be 100J, work done during the process was

A) Zero

B) 200J

C) –200J

D) 100J

Ⓐ Ⓑ Ⓒ Ⓓ

Q.13 During an adiabatic expansion the increase in volume is associated with:

A) Decrease in pressure and decrease in temperature

B) Increase in pressure and increase in temperature

C) Increase in pressure and decrease in temperature

D) Decrease in pressure and increase in temperature

Ⓐ Ⓑ Ⓒ Ⓓ

Q.14 In which process the P–V indicator diagram is straight line parallel to volume axis?

A) Isobaric

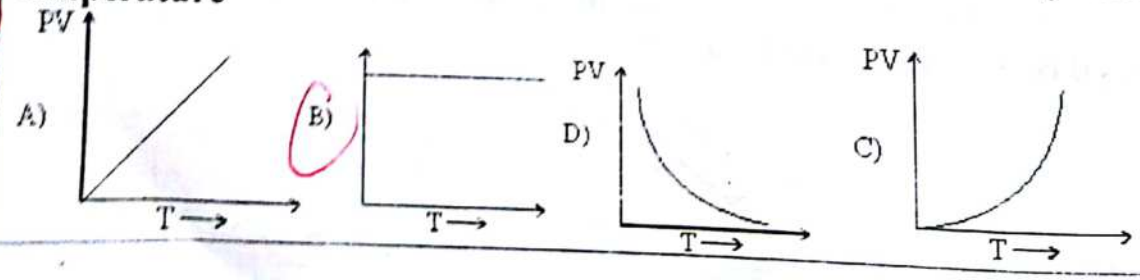
B) Adiabatic

C) Isothermal

D) Isochoric

Ⓐ Ⓑ Ⓒ Ⓓ

Q.15 Which one of the following graphs best illustrates the relationship between the product (PV) for an ideal gas and thermodynamics temperature



Ⓐ Ⓑ Ⓒ Ⓓ

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Q.16 Cloud formation is an example of: (A) (B) (C) (D)

A) Adiabatic process
B) Isochoric process
C) Isothermal process
D) None

Q.17 $\frac{1}{273.16}$ of thermodynamic temperature of the triple point of water is equal to: (A) (B) (C) (D)

A) 1°C
B) 1K
C) 0°C
D) 0K

Q.18 The state of thermal equilibrium between two systems is determined by equality of (A) (B) (C) (D)

A) Pressure
B) Volume
C) Temperature
D) None of these

Q.19 An ideal gas is compressed at constant temperature. Which line of the table is correct? (A) (B) (C) (D)

	Work done	Heating of gas
A)	Work is done by gas	Heat energy goes into gas
B)	Work is done by gas	Heat energy goes out of gas
C)	Work is done on gas	Heat energy goes into gas
D)	Work is done on gas	Heat energy goes out of gas

Q.20 The value of Boltzman constant is: (A) (B) (C) (D)

A) 3.85×10^{-23}
B) $2.185\times10^{-12}\ JK^{-1}$
C) $1.62\times10^{-22}\ JK^{-1}$
D) $1.38\times10^{-23}\ JK^{-1}$

Q.21 The rms velocity of hydrogen and oxygen molecule's having ratio. (A) (B) (C) (D)

A) 1 : 4
B) 4 : 1
C) 1 : 2
D) 1 : 16

$\frac{v_1}{v_2} = \sqrt{\frac{16}{1}}$

Q.22 The difference of molar specific heats at constant pressure and constant volume is called: (A) (B) (C) (D)

A) Molar heat
B) Heat constant
C) Boltzman constant
D) Universal gas constant

Q.23 Which of the following is expression of mean square speed of 'N' gas molecules contained in a cylinder (A) (B) (C) (D)

A) $\frac{v_1+v_2+\_\_\_\_\_+v_N}{N}$
B) $\frac{v_1^2+v_2^2+\_\_\_\_\_+v^2_N}{N}$
C) $\sqrt{\frac{v_1+v_2+\_\_\_\_\_+v_N}{N}}$
D) $\sqrt{\frac{v_1^2+v_2^2+\_\_\_\_\_+v_N}{N}}$

Q.24 As $C_p - C_v = R$ shows that $C_p > C_v$. What is also true? (A) (B) (C) (D)

A) $\Delta T_p > \Delta T_v$
B) $\Delta U_p > \Delta U_v$
C) Both "A" and "B"
D) $\Delta U_p = \Delta U_v$

Q.25 If the temperature of a patient is 40°C, his temperature on the Fahrenheit scale will be (A) (B) (C) (D)

A) 72°F
B) 96°F
C) 100°F
D) 104°F

$\frac{9}{5}(40)+32$
72
32
104

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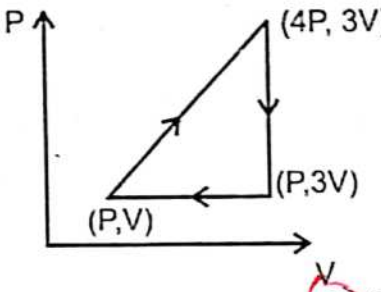
Q.26 **Pressure exerted by a perfect gas is equal to** Ⓐ Ⓑ Ⓒ Ⓓ

A) Mean kinetic energy per unit volume
B) Half of mean kinetic energy per unit volume
C) One-third of mean kinetic energy per unit volume
D) Two-thirds of mean kinetic energy per unit volume

Q.27 **The value of the universal gas constant is** Ⓐ Ⓑ Ⓒ Ⓓ

A) 8.314 J $mol^{-1}K^{-1}$
B) 8.32J $mol^{-1}K^{-1}$
C) 100 J $mol^{-1}K^{-1}$
D) 1.38×10^{-23}J $mol^{-1}K^{-1}$

Q.28 **An ideal monatomic gas has taken round the cycle, work done during the cycle is:** Ⓐ Ⓑ Ⓒ Ⓓ



A) Zero
B) 6PV
C) 3 PV
D) 9PV

Q.29 **Internal energy is a unique function of state because change in internal energy** Ⓐ Ⓑ Ⓒ Ⓓ

A) Does not depend on path
B) Depends on path
C) Corresponds to an adiabatic process
D) Corresponds to an isothermal process

Q.30 **The temperature of a body at 100 °C is increased by Δθ as measured on the Celsius scale. How is this temperature change expressed in Kelvin scale?** Ⓐ Ⓑ Ⓒ Ⓓ

A) Δθ +337
B) Δθ +100
C) Δθ +237
D) Δθ

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LEARNING OUTCOMES

1. COULOMB'S LAW

- Mutual Force
- Effect of Medium on Coulomb's Force
- Application of $F = \frac{1}{4\pi\varepsilon_o}\frac{Q_1Q_2}{r^2}$ in free space or air

2. ELECTRIC FIELD STRENGTH

- Problem solving with $E = \frac{\Delta V}{\Delta d}$ and $E = \frac{Q}{4\pi\varepsilon_o r^2}$

3. ELECTRIC POTENTIAL AND USE EQUATION $V = \frac{1}{4\pi\varepsilon_o}\frac{q}{r}$

4. CAPACITOR

- Capacitance of a capacitor
- Use and derivation of $C = \frac{Q}{V}, C = \frac{A\varepsilon_o}{d}$

5. ENERGY STORED IN A CAPACITOR AND USE RELATION $W = \frac{1}{2}QV$ AND $W = \frac{1}{2}CV^2$

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KIPS SELF ASSESSMENT TEST

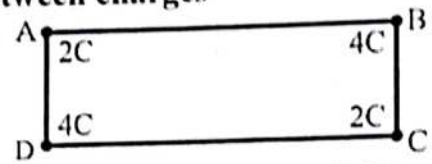
Q.1 **When a dielectric is inserted between the plates of a capacitor, which one is true**

A) Energy stored increase
B) Capacitance decrease
C) Energy stored decrease
D) All

Q.2 **Area under Q –V graph for a capacitor represents**

A) Charged stored
B) Electric field strength
C) Energy stored
D) Potential difference

Q.3 **Four electric changes A, B, C, D are arranged as shown. The electric force will be least between charges**



A) A and B
B) A and D
C) B and D
D) A and C

Q.4 **A and B are two points in an electric field. If the work done in carrying 4.0 coulomb of electric charge from A to B is 16.0 joule, the potential difference between A and B is**

A) Zero
B) 2.0 V
C) 4.0 V
D) 16.0 V

Q.5 **The potential gradient between the two charged plates having separation of 0.5 cm and potential difference of 12 volt is**

A) $240NC^{-1}$
B) $24NC^{-1}$
C) $2.4\ NC^{-1}$
D) $2400NC^{-1}$

Q.6 **Which of the following relations is not possible between emf (ε) of a source and the terminal potential difference (V_T)?**

A) $\varepsilon > V_T$
B) $\varepsilon = V_T$
C) $\varepsilon < V_T$
D) $V_T \neq O$ yet $\varepsilon = O$

Q.7 **Two point charges repel each other with a force of 4×10^{-5} newton at a distance of 1 meter. Two charges are**

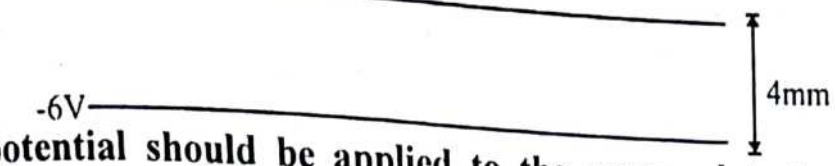
A) Both positive
B) Both negative
C) Alike
D) Unlike

Q.8 **The energy stored in a unit volume of the dielectric between parallel plate of a capacitor is**

A) Energy density = $\frac{1}{2} E^2 \epsilon_o \epsilon_r$
B) Energy density = $\frac{E^2}{2 \epsilon_o \epsilon_r}$
C) Energy density = $\frac{E^2 \epsilon_o}{2 \epsilon_r}$
D) Energy density = $\frac{1}{2} \epsilon_o \epsilon_r E$

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Q.9 The large horizontal metal plates are separated by 4mm. The lower plate is at a potential of –6V.

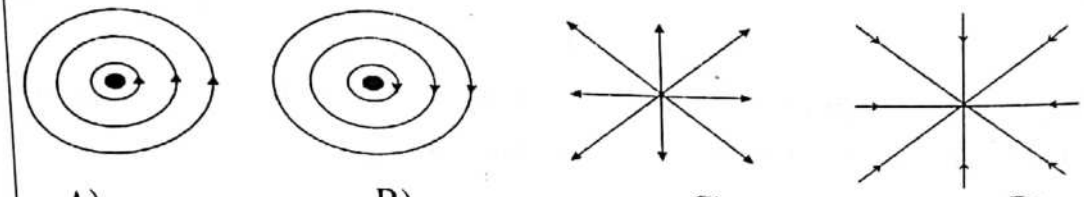


What potential should be applied to the upper plate to create an electric field of strength 4000 Vm^{-1} upward in the space between the plates?

A) +22 V
B) +10V
C) –10 V
D) –22V

Ⓐ Ⓑ Ⓒ Ⓓ

Q.10 Which diagram represent the electric field of a negative point charge, shown by



A) B) C) D)

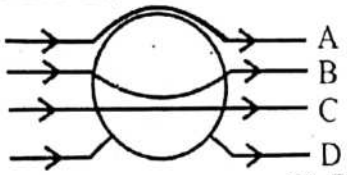
Ⓐ Ⓑ Ⓒ Ⓓ

Q.11 Capacitance of a capacitor does not depend upon

A) Separation between plates
B) Area of the plates
C) Thickness of the plates
D) Medium between the plates

Ⓐ Ⓑ Ⓒ Ⓓ

Q.12 A metallic solid sphere is placed in a uniform electric field. Which of given path of electric field line is correct.



A) A
B) C
C) B
D) D

Ⓐ Ⓑ Ⓒ Ⓓ

Q.13 A charge of 2C el periences a force 2000N in a uniform electric field. In this field the potential difference between two points separated by a distance 1cm is

A) 2V
B) 5V
C) 10 V
D) 20V

$\frac{1000 \times 10^{-2}}{1 \times 10^{-2}}$

Ⓐ Ⓑ Ⓒ Ⓓ

Q.14 An α-particle is accelerated through potential difference 2000volt. Its K.E will be

A) 2000eV
B) 4000eV
C) 40000eV
D) 20000eV

Ⓐ Ⓑ Ⓒ Ⓓ

Q.15 Which of given is not the unit of electric intensity

A) NC^{-1}
B) Vm^{-1}
C) NV^{-1}
D) None of these

Ⓐ Ⓑ Ⓒ Ⓓ

Q.16 The electrons separated by a distance 'r' experience a force F between them. The force between a proton and a singly ionized helium atom separated by a distance 2r is:

A) $4F$
B) $\frac{F}{2}$
C) $2F$
D) $\frac{F}{4}$

Ⓐ Ⓑ Ⓒ Ⓓ

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Q.17 Two point charges +2 coulomb and +6 coulomb repel each other with a force of 12 N. If a charge of -2 coulomb is given to each of these charges, the force will now be

A) Zero
B) 8 N (attractive)
C) 8 N (repulsive)
D) 16 N (attractive)

Ⓐ Ⓑ Ⓒ Ⓓ

Q.18 Two plates are 2cm apart. If a potential difference of 10 volt is applied between the plates. The electric field between the plates will be

A) 20 N/C
B) 250 N/C
C) 500 N/C
D) 250 N/

Ⓐ Ⓑ Ⓒ Ⓓ

Q.19 Capacitance with air is 10F, if a dielectric of $\varepsilon_r = 100$ is inserted then new capacitance

A) 1000 F
B) 1000 F
C) 10 ηF
D) 100 F

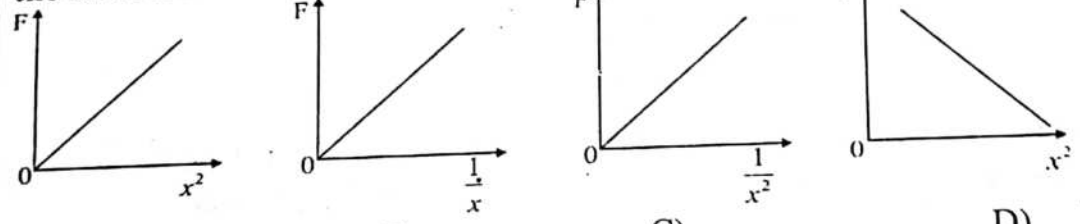
Ⓐ Ⓑ Ⓒ Ⓓ

Q.20 The electrostatic force between two point charges q_1 and q_2 at separation r is given by $F = kq_1 q_2 / r^2$ The constant k

A) Depends on the system of units only
B) Depend son the medium between the charges only
C) Depends on both the system of units and the medium between the charges
D) Is independent of both the system of units and the medium between the charges

Ⓐ Ⓑ Ⓒ Ⓓ

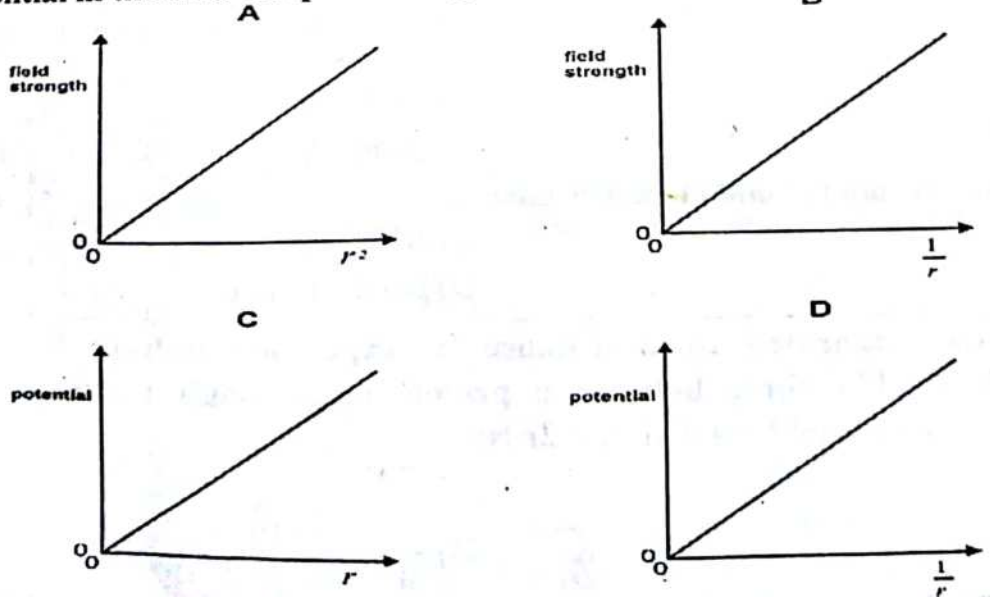
Q.21 A point charge at a distance x from another point charge experiences a force of repulsion F which one of the following graphs shows how the force F is related to x?



A) B) C) D)

Ⓐ Ⓑ Ⓒ Ⓓ

Q.22 Which graph correctly relates the electric field strength or electric potential in the field of a point charge, with distance r from the charge?



Ⓐ Ⓑ Ⓒ Ⓓ

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Q.23	**A point charge is placed at Y in front of an earthed metal sheet X. P and Q are two points between X and Y as shown in the diagram. If the electric field strengths at P and Q are respectively E_P and E_Q, which one of the following statements is correct?** A) $E_P = 0$ B) $E_Q = 0$ C) $E_P > E_Q$ D) $E_Q > E_P$	Ⓐ Ⓑ Ⓒ Ⓓ
Q.24	**Two charges are placed a certain distance apart in air. When a metallic sheet is placed between them, the electrostatic force between them will.** A) Decrease B) Increase C) Remain unchanged D) Become zero	Ⓐ Ⓑ Ⓒ Ⓓ
Q.25	**The energy stored between the plates of a capacitor is/are represented by** A) $U=\frac{CV^2}{2}$ B) $U=\frac{qV}{2}$ C) $U=\frac{q^2}{2C}$ D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**In a charged capacitor the energy resides in** A) Electric field surrounding the capacity B) Electric field inside the capacitor C) Both "A" and "B" D) Gravitational field	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**Value of ε_r for various dielectrics is always** A) Less than unity B) Equal to unity C) Larger than unity D) No hard and fast rule	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**If the distance between the two point charges become half, then force between them becomes _____** A) Double B) Half C) Four times D) Remains same	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**If $F = \frac{kq_1q_2}{r^2}$ then $\frac{F}{q_1}$ is** A) The force on q_1 B) Electric field generated by q_2 C) Electric potential due to q_1 D) Electric flux	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**The electric force between two charges placed in air is 2N. When placed in a medium of ϵ_r 80, the force reduces** A) 0.019 B) 0.029 C) 0.025 D) 0.04	Ⓐ Ⓑ Ⓒ Ⓓ

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LEARNING OUTCOMES

1. **CONCEPT OF CURRENT AND USE I = Q/T**
   - Electronic Current ☐
   - Conventional Current ☐
   - Current Through metallic conductor ☐
   - Drift Velocity ☐
   - Effects of Current ☐
2. **OHM'S LAW AND USE *V = IR.***
   - Ohmic conductor ☐
   - Non ohmic conductor ☐
   - Explanation with different graphs ☐
3. **COMBINATION OF RESISTORS**
   - Series Combination of resistors ☐
   - Parallel combination of resistors ☐
4. **RESISTANCE AND RESISTIVITY AND USE** $R = \frac{\rho L}{A}$ ☐
5. **POTENTIAL DIFFERENCE AND E.M.F AND USE V=W/Q**
   - Difference between emf and terminal potential difference ☐
6. **POWER DISSIPATION IN RESISTORS AND USE P =VI=I^2R=V^2/R** ☐
7. **KIRCHHOFF'S FIRST LAW AS CONSERVATION OF CHARGE.** ☐
8. **KIRCHHOFF'S SECOND LAW AS CONSERVATION OF ENERGY.** ☐
9. **KIRCHHOFF'S LAWS TO SOLVE PROBLEMS.** ☐

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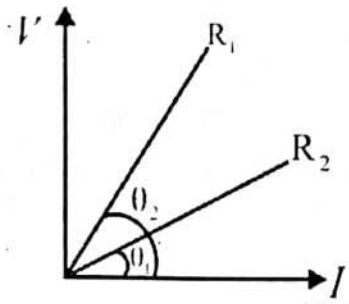
Q.1 **A resistor connected to a battery is heated due to current through it. Which of the following quantity does not vary** Ⓐ Ⓑ Ⓒ Ⓓ

A) Resistance
B) Conductivity
C) Resistivity
D) Number of free electron

Q.2 **Ampere-second stands for the unit of** Ⓐ Ⓑ Ⓒ Ⓓ

A) emf
B) Energy
C) Charge
D) Power

Q.3 **The V-I graph of a conductor at two different temperatures as shown in Fig. The relation between resistance will be** Ⓐ Ⓑ Ⓒ Ⓓ



A) $R_1 > R_2$
B) $R_2 > R_1$
C) $R_1 = R_2$
D) $R_1 = 2\,R_2$

Q.4 **The equivalent resistance of resistors connected in parallel is always** Ⓐ Ⓑ Ⓒ Ⓓ

A) Smaller than the sum of individual resistors
B) Greater than the sum of individual resistors
C) Equal to the sum of resistors
D) None of these

Q.5 **The electrical resistance of metals**

A) Increases with an increase in temperature
B) Decrease with an increase in temperature
C) Is independent of temperature
D) Sometimes increases sometimes decreases with temperature

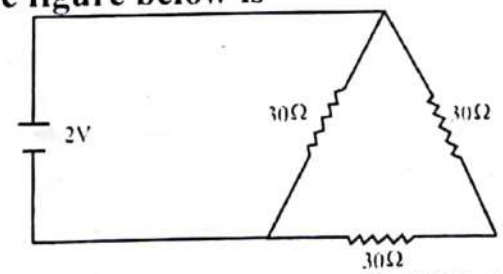
Q.6 **A wire has a resistance 12 ohm. It is bent in the form of a circle. The effective resistance between the two points on any diameter of circle is** Ⓐ Ⓑ Ⓒ Ⓓ

A) 12 Ω
B) 6 Ω
C) 24 Ω
D) 3 Ω

Q.7 **The smallest resistance obtained by connecting 50 resistances of 1/4 ohm each is** Ⓐ Ⓑ Ⓒ Ⓓ

A) 200 Ω
B) 1/200 Ω
C) 50/4 Ω
D) 4/50 Ω

Q.8 **The current 'I' in the figure below is** Ⓐ Ⓑ Ⓒ Ⓓ



A) 1/5 A
B) 1/10 A
C) 1/15 A
D) 1/45 A

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Q.9 Two resistances R_1 and R_2 ($R_1 < R_2$) are connected in parallel. Which of the following is true for equivalent resistance R? Ⓐ Ⓑ Ⓒ Ⓓ

A) $R < R_1$
B) $R_1 < R < R_2$
C) $R > (R_1 + R_2)$
D) $R_2 < R < (R_1 + R_2)$

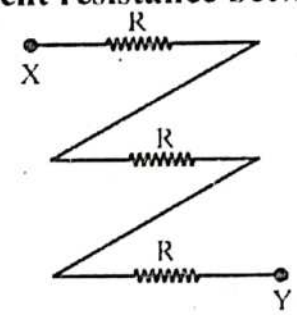
Q.10 Three 2 Ω resistor are arranged in a triangle. What is the resistance between any two corners? Ⓐ Ⓑ Ⓒ Ⓓ

A) 4 Ω
B) 3 Ω
C) 4/3 Ω
D) 3/4 Ω

Q.11 Two unequal resistances are connected parallel across a battery. Which of the following statement is true? Ⓐ Ⓑ Ⓒ Ⓓ

A) Same current will flow through both resistances
B) Current through smaller resistance is higher
C) Current through larger resistance is higher
D) Current can be higher in any resistance depending on emf of the cell

Q.12 Three resistances each having value 'R' are connected as shown in figure what is the equivalent resistance between X and Y Ⓐ Ⓑ Ⓒ Ⓓ



A) R
B) 3R
C) $\frac{R}{3}$
D) R^3

Q.13 When a wire is stretched double of is length, then its resistance will be Ⓐ Ⓑ Ⓒ Ⓓ

A) 16 R
B) 2 R
C) 4 R
D) 8 R

Q.14 Graph between V and I for non-ohmic devices Ⓐ Ⓑ Ⓒ Ⓓ

A) Straight line
B) Usually not straight line
C) Always not straight line
D) Some time straight line

Q.15 An electrical bulb marked 100 W, 200 V would mean the resistance is Ⓐ Ⓑ Ⓒ Ⓓ

A) 200 ohm
B) 400 ohm
C) 50 ohm
D) 50 ohm

Q.16 The current in a resistor is 8.0 mA. What charge flows through the resistor in 0.020 s? Ⓐ Ⓑ Ⓒ Ⓓ

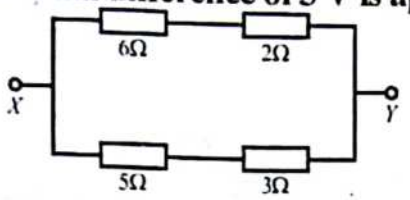
A) 0.16 mC
B) 1.6 mC
C) 4.0 mC
D) 0.40 mC

Q.17 Which equation is used to define resistance? Ⓐ Ⓑ Ⓒ Ⓓ

A) Energy = $(\text{current})^2 \times \text{resistance} \times \text{time}$
B) Potential difference = current × resistance
C) Power = $(\text{current})^2 \times$ resistance
D) Resistivity = resistance × area ÷ length

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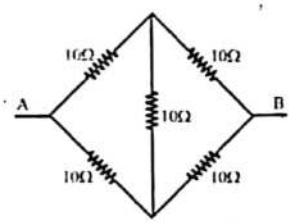
Q.18 In the circuit shown, a potential difference of 3 V is applied across XY.



What is the current through the 5 Ω resistor?

A) $\frac{15}{8}$ A
B) $\frac{3}{4}$ A
C) $\frac{3}{5}$ A
D) $\frac{3}{8}$ A

Q.19 In the given network, the effective resistance between the points A and B is



A) 25Ω
B) 10Ω
C) 20Ω
D) 30Ω

Q.20 Which of the following statements is not true?

A) Conductance is the reciprocal of resistance and is measured in siemens
B) Ohm's law is not applicable at very low and very high temperatures
C) Ohm's law is applicable to semiconductors
D) Ohm's law is not applicable to electron tubes, discharge tubes

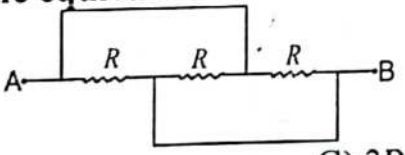
Q.21 Ohm's law establishes a relation between

A) Current and voltage
B) Charge and voltage
C) Resistance and voltage
D) Current and resistance

Q.22 When 2 Ohm, 4 Ohm and 6 Ohm resistance are connected in parallel, their resultant resistance will be

A) 12 Ohm
B) $\frac{12}{11}$ Ohm
C) $\frac{11}{12}$ Ohm
D) Data is insufficient

Q.23 In the given network the equivalent resistance between A and B is



A) R
B) $\frac{R}{3}$
C) 3R
D) $\frac{2R}{3}$

Q.24 Which of the following statements applies to a thermistor?

A) Its resistance fall when more light fill on it
B) Its resistance rise when its temperature increases
C) It resistance rises when more light fall on it
D) Its resistance drop when its temperature increases

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Q.25 A 100W, 200V bulb is connected to a 160V supply. The actual power consumption would be

A) 64W
B) 72W
C) 100W
D) 90W

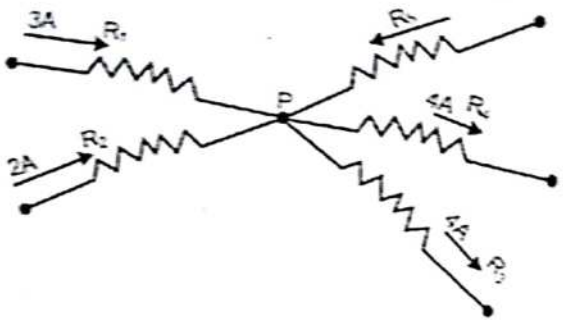
Q.26 Electrical energy is converted to heat at the rate of _____

A) IRt
B) I^2R
C) I^2Rt
D) VIt

Q.27 A 40 W lamp turns half the electrical energy to give light. How much light energy does it give out in 10 s?

A) 200 J
B) 400 J
C) 800 J
D) 40 J

Q.28 Consider the circuit diagram in which a mesh is shown carrying currents in each resistor. What is the current passing through "R_5"?

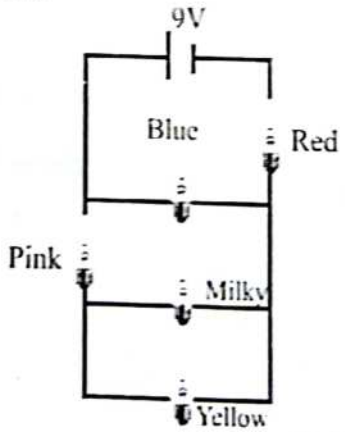


A) 10A
B) 6A
C) 3A
D) 2A

Q.29 Temperature coefficient of resistance of a material is 0.0004 K^{-1}. When temperature of material is increased by 50°C then initial resistivity of material is

A) $50 \times 10^{-8}\ \Omega m$
B) $90 \times 10^{-8}\ \Omega m$
C) $100 \times 10^{-8}\ \Omega m$
D) $200 \times 10^{-8}\ \Omega m$

Q.30 A battery lights all five bulbs as in figure. Which bulb, if removed, would cause all the lamps to go out.



A) Red only
B) Milky only
C) Pink only
D) Yellow only

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KIPS UNIT–9

UHS TOPIC – 11+12
F.Sc: Chapter # 14+15+16

Electromagnetism + Electromagnetic Induction
MCQs: 3+3

LEARNING OUTCOMES

1. **MAGNETIC FIELD DUE TO CURRENT IN A LONG STRAIGHT WIRE.** ☐
2. **FORCE ON CURRENT CARRYING CONDUCTOR IN UNIFORM MAGNETIC FIELD AND USE** $F = ILB\sin\theta$
   - Dependence of Force on Various factors ☐
   - Explanation of force by Right hand Rule ☐
   - Extension of Right Hand rule ☐
3. **MAGNETIC FIELD DUE TO CURRENT CARRYING SOLENOID**
   - Ampere's Law ☐
   - Problem Solving with $B = \mu_o n I$ ☐
4. **FORCE ON A MOVING CHARGE IN MAGNETIC FIELD AND USE** $F = q(V \times B)$ **OR** $F = qVB\sin\theta$
5. **E/M FOR AN ELECTRON**

ELECTROMAGNETIC INDUCTION

   - Magnetic Flux ☐
   - Use of equation $\phi = BA$ ☐
   - Faraday's law and its applications ☐
   - Lenz's law and its Applications ☐
   - Motional emf and Application of $\varepsilon = -vBL\sin\theta$ ☐
6. **ALTERNATING CURRENT AND USE** $V = V_0 \sin\omega t$
   - Peak Value ☐
   - Peak to peak value ☐
   - Instantaneous value ☐
   - rms value ☐
   - Time period ☐
   - Frequency ☐
7. **TRANSFORMER**
   - Working Principle ☐
   - Construction ☐
   - Step up & Step down transformer ☐
   - Solve problems using $\frac{N_s}{N_p} = \frac{V_s}{V_p} = \frac{I_p}{I_s}$ ☐

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KIPS SELF ASSESSMENT TEST

Q.1 Force on current carrying conductor per unit length is given by
A) IL.sinθ
B) IL.B
C) IL
D) IBsinθ

Q.2 The magnetic field inside a solenoid is
A) Zero
B) Non-uniform
C) Infinites
D) Uniform

Q.3 A horizontal wire carries current at right angle to a horizontal magnetic field. The wire is then turned through 90° and so becomes parallel with the magnetic field. What describes the initial and final force on the wire?

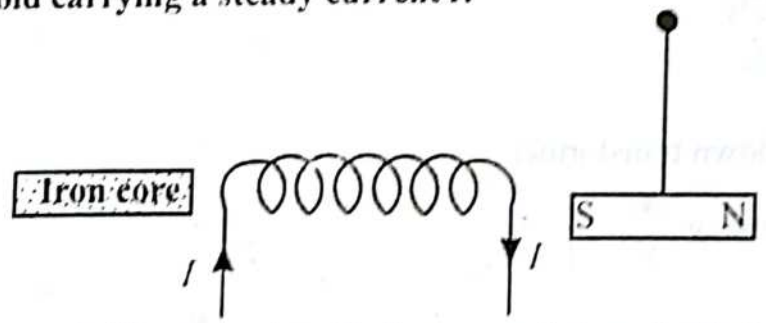
	Initial force	Final Force
A)	Vertical	Zero
B)	Vertical	Zero
C)	Zero	Horizontal
D)	Zero	Vertical

Q.4 Two parallel wires carrying current in opposite direction:
A) Repel each other
B) Attract each other
C) No effect on each other
D) None of these

Q.5 If length of solenoid is doubled, and number of turns is halved then $\vec{B}$ inside the solenoid becomes:
A) Half
B) Double
C) One fourth
D) Four times

Q.6 An electron is moving along the axis of a solenoid carrying a current. Which of the following is a correct statement about the electromagnetic force acting on the electron?
A) The force acts radially inwards
B) The force acts radially outwards
C) The force acts in the direction of motion
D) No force acts

Q.7 The diagram shows a small magnet hanging on a thread near the end of a solenoid carrying a steady current *I*.



What happens to the magnet as the iron core is inserted into the solenoid?
A) It moves towards the solenoid
B) It moves towards the solenoid and rotates through 180°
C) It moves away from the solenoid
D) It moves away from the solenoid and rotates through 180°

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Q.8 A long straight current carrying conductor has current direction from bottom to top when held vertically. What will be the direction of magnetic field lines when observed from below the conductor?
A) Clockwise
B) Vertically upward
C) Anticlockwise
D) Vertically downward

Q.9 Two long straight wires are set parallel to each other at separation r and each carries a current I in the same direction. The strength of the magnetic field at any point midway between the two wires is
A) $\frac{\mu_o I}{r}$
B) $\frac{2\mu_o I}{r}$
C) $\frac{2\mu_o I}{2r}$
D) Zero

Q.10 Magnetic field inside a solenoid is
A) Directly proportional to current
B) Inversely proportional to current
C) Directly proportional to its length
D) Inversely proportional to the total number of turns

Q.11 Magnetic lines of force
A) Always intersect
B) Are always closed
C) Tend to crowd far away from the poles of a magnetic
D) Do not pass through vacuum

Q.12 A straight wire of diameter 0.5 mm carrying a current of 1 A is replaced by another wire of 1mm diameter carrying same current. The strength of magnetic field away at the same distance
A) Twice the earlier value
B) One – half of the earlier value
C) One – quarter of the earlier value
D) Same as the earlier value

Q.13 The magnitude of the force on a moving charge is maximum when angle between the velocity of the charge and the magnetic field is,
A) 0°
B) 180°
C) 90°
D) 45°

Q.14 When the current flowing through the wire is stopped, the magnetic field around the wire becomes.
A) Doubles
B) Half
C) Remains same
D) Zero

Q.15 If a charge particle enters a uniform magnetic field there is a change in its
A) Kinetic energy
B) Magnitude of velocity
C) Direction of velocity
D) All of these

Q.16 A coil of 200 turns linked by a flux of 30 m Web, if this flux is reversed in a time of 1 ms, the change in flux is
A) 30×10^{-3} Web
B) 60×10^{-3} Web
C) 50×10^{-3} Web
D) Zero

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Q.17 **Which one of the following does not effect the magnitude of the induce emf in electromagnetic induction**

A) The strength of the magnetic field linkage the cell
B) The resistance of the coil cutting the magnetic field
C) The speed with which the coil cuts the magnetic field
D) The number of turns in the coil

Ⓐ Ⓑ Ⓒ Ⓓ

Q.18 **A step-up transformer**

A) Increases power-level
B) Increases voltage-level
C) Decreases current-level
D) Both B and C

Ⓐ Ⓑ Ⓒ Ⓓ

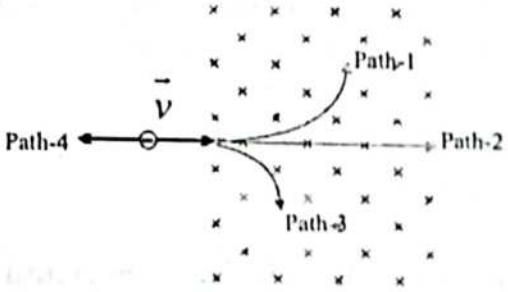
Q.19 **PQRS is a square loop made of uniform conducting wire. If the current enters the loop at P and leaves at S, then the magnetic field will be:-**



A) Maximum at the centre of the loop
B) Zero at the centre of loop
C) Zero at all points inside the loop
D) Zero at all points outside of the loop

Ⓐ Ⓑ Ⓒ Ⓓ

Q.20 **The fig shows a uniform magnetic field $\vec{B}$ directed into the plane of paper. A particle with –Ve change moves in the plane, which of four paths 1, 2, 3 or 4 does the particle follow**



A) Path 1
B) Path 2
C) Path 3
D) Path 4

Ⓐ Ⓑ Ⓒ Ⓓ

Q.21 **The number of turns in the primary and secondary coil of a step-down transformer are 200 and 500 respectively. If the power in the input is 100 Watt and current 1A then the output power and current will respectively**

A) 100 W, 2A
B) 400 W, 4A
C) 200 W, 2A
D) 100 W, 4 A

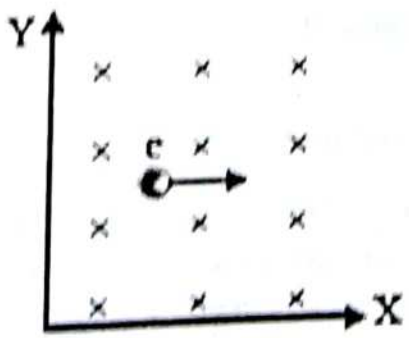
Ⓐ Ⓑ Ⓒ Ⓓ

Q.22 **An A.C, generator produces alternating voltage with peak value of 220 V. The rms value of the alternating voltage is:**

A) $220\sqrt{2}\ Volts$
B) $\frac{220^2}{\sqrt{2}}\ Volts$
C) $\frac{220}{\sqrt{2}}\ Volts$
D) $\frac{210^2}{\sqrt{2}}\ Volts$

Ⓐ Ⓑ Ⓒ Ⓓ

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Q.23	**If the instantaneous current in a circuit is given by I=2sin(ωt+0) amperes, the rms value of the current is** A) $\sqrt{2}$A B) 2A C) $2\sqrt{2}$ A D) zero	(A) (B) (C) (D)
Q.24	**A sphere of radius 2 cm^2 enclosed a bar magnet of strength 0.1 T, the net magnetic flux through the sphere is** A) 2×10^{-3} Wb B) 2×10^{-4} Wb C) Net flux is zero D) 2×10^{-2} Wb	(A) (B) (C) (D)
Q.25	**Lenz's law is a particular from of law of conservation of** A) Charge B) Current C) Energy D) Magnetic field	(A) (B) (C) (D)
Q.26	**In the step up transformer , when the alternating voltage increase then the alternating current will** A) Increase B) Decrease C) Not change D) Not depend on core	(A) (B) (C) (D)
Q.27	**Which of the following Statements is false?** A) A stationary charge produces a constant electric field B) A moving charge with uniform speed produces a constant magnetic field. C) An accelerated charge produces combination of varying electric and magnetic field D) A conductor carrying steady current has no electric field in it	(A) (B) (C) (D)
Q.28	**When north pole of a magnet is moved towards the face of a coil then the face of coil act as:** A) North pole B) South pole C) Neutral D) We cannot predict about it	(A) (B) (C) (D)
Q.29	**The mutual inductance of a pair of coils is 2H, if the current in one of the coils changes from 10A to zero in 0.1s, the emf induced in the other coil is:** A) 0.2V B) 0.2 V C) 20V D) 200 V	(A) (B) (C) (D)
Q.30	**In the given figure the electron enters into the magnetic field. It deflects in.....direction**  A) +ve X direction B) + ve Y direction C) –ve X direction D) – ve Y direction	(A) (B) (C) (D)

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KIPS UNIT – 10

UHS TOPIC – 13+14
F.Sc: Chapter # 17+18

Deformation of Solids + Electronics
MCQs: 2+3

LEARNING OUTCOMES

DEFORMATION OF SOLIDS

1. **STRESS**
   - Tensile Stress
   - Compressive Stress
   - Shear Stress
   - Volumetric Stress
2. **STRAIN**
   - Tensile Strain
   - Shear Strain
   - Volumetric Strain
3. **MODULUS OF ELASTICITY**
   - Young Modulus
   - Bulk Modulus
   - Shear Modulus
4. **HOOK'S LAW.**
5. **ELASTIC AND PLASTIC DEFORMATION OF A MATERIAL**
6. **BRITTLE AND DUCTILE MATERIALS**
7. **STRAIN ENERGY IN DEFORMED MATERIALS AND FORCE-EXTENSION GRAPH.**
8. **HALF AND FULL WAVE RECTIFICATION.**
9. **USE OF SINGLE DIODE FOR HALF WAVE RECTIFICATION OF AN ALTERNATING CURRENT**
10. **USE OF FOUR DIODES FOR FULL WAVE RECTIFICATION OF AN ALTERNATING CURRENT**
11. **AN OPERATIONAL AMPLIFIER AND ITS CHARACTERISTICS**
12. **APPLICATIONS O F OPERATIONAL AMPLIFIERS AS INVERTING AND NON-INVERTING AMPLIFIERS AND USE RELATIONS**

1. $gain = -\frac{R_2}{R_1}$ (for inverting amplifier)

2. $gain = 1 + \frac{R_2}{R_1}$ (for non-inverting amplifier)

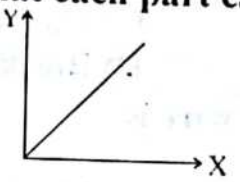
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KIPS SELF ASSESSMENT TEST

Q.1 Young's modulus of steel is 2×10^{11} N/m². A steel wire has a length of 1 m and area of cross section 1 mm². The work required to increase its length by 1 mm is

A) 0.1 J
B) 1 J
C) 10 J
D) 100 J

Q.2 A wire can support a load w without braking. It is cut into two equal parts. The maximum load that each part can support is



A) $\frac{w}{4}$
B) $\frac{w}{2}$
C) w
D) 2w

Q.3 A student plots a graph from his reading on the determination of Young's modulus of metal wire but forgets to label. The quantity on x and y axes may be respectively.

A) Weight hung and length increased
B) Stress applied and length increased
C) Stress applied and strain developed
D) All of these

Q.4 The modulus of rigidity of a liquid is

A) Zero
B) 1
C) Infinite
D) None of these

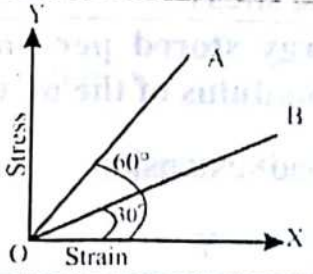
Q.5 If the work done in stretching a wire by 1 mm is 2 J, the work necessary for stretching another wire of the same material but double the radius and half the length by 1 mm is

A) 16 J
B) 8 J
C) 4 J
D) (1/4) J

Q.6 A copper wire and a steel wire of the same diameter and length are connected end to end and a force is applied which stretches their combined length by 1 cm. Then the two wires have

A) The same stress and strain
B) The same stress but different strains
C) The same strain but different stresses
D) Different stresses and strains

Q.7 The stress versus strain graphs for wires of two materials A and B are as shown in the figure. If Y_A and Y_B are the respective Young's modulii of the materials, then



A) $Y_B = 2Y_A$
B) $Y_A = 2Y_B$
C) $Y_B = 3Y_A$
D) $Y_A = 3Y_B$

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Q.8 Which material has same value of Young and Bulk's modulus
A) Aluminum
B) Copper
C) Iron
D) Platinum

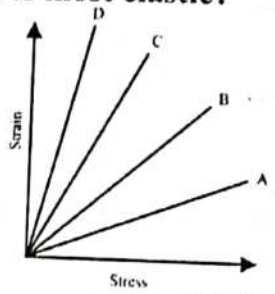
Q.9 If the tensile force is suddenly removed from a wire then its temperature will
A) Decrease
B) Increase
C) Become zero
D) Remain constant

Q.10 The limit upto which the stress is directly proportional to strain is called
A) Elastic limit
B) Proportional limit
C) Elastic relaxation
D) Breaking limit

Q.11 Energy per unit volume of stretched wire is
A) $\left(\frac{1}{2}\right)$ × load × extension
B) Load × stress
C) Stress × strain
D) $\left(\frac{1}{2}\right)$ × stress × strain

Q.12 For a ductile substance
A) It has elastic as well as plastic regions
B) It does not break just after elastic limit
C) It only has elastic region and breaks after it
D) Both A and B

Q.13 Which of the following solids is most elastic?



A) A
B) B
C) C
D) D

Q.14 A cube of each of length 3m is subjected to a normal force of 36N. The stress on a cube is
A) 12 Nm^{-2}
B) 4 Nm^{-2}
C) 2 Nm^{-2}
D) 8 Nm^{-2}

Q.15 A rubber band of length l is pulled from both sides such that it extends up l_1 in this condition the band is under
A) Tensile strain
B) Tensile stress
C) Shear stress
D) Shear strain

Q.16 The energy stored per unit volume of a strained wire is (Y is the Yong's modulus of the material of the wire)
A) $\frac{1}{2}$×load×extension
B) $\frac{1}{2}\times Y\times\frac{Y}{(\text{Strain})^2}$
C) $\frac{1}{2}Y\times(\text{strain})^2$
D) Stress × strain

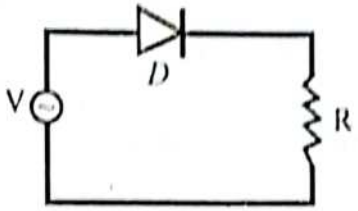
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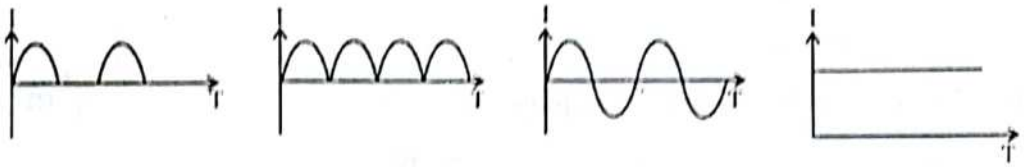
Q.17 An elongation of 0.1% in a wire of cross-sectional area $10^{-6}m^2$ causes a tension of 100N. The young's modulus is
A) 10^{12} N/m^2
B) 10^{11} N/m^2
C) 10^{10} N/m^2
D) 10^{7} N /m^2
(A) (B) (C) (D)

Q.18 In a full wave rectifier, the diode conduct during
A) Both halves of the input cycle
B) A portion of the positive half cycle of the input
C) Positive half cycle of the input
D) Negative half cycle or positive half cycle
(A) (B) (C) (D)

Q.19 During half wave rectification frequency
A) is halved
B) is quadrupled
C) is doubled
D) remains same
(A) (B) (C) (D)

Q.20 A PN junction (D) shown in the figure can act as a rectifier. An alternating current source (V) is connected in the circuit. The output current in the circuit is represented by:





A) B) C) D)
(A) (B) (C) (D)

Q.21 In full wave rectification, the output D.C. voltage across the load is obtained for_____
A) The positive half cycle of input A.C.
C) The complete cycle of input A.C
B) The negative half cycle of input A.C.
D) All of the above.
(A) (B) (C) (D)

Q.22 What is voltage gain in a common emitter amplifier when input resistance is 3 Ω and the load resistance 24 Ω with $\beta = 60$:
A) 8.4
B) 4.8
C) 2.4
D) 480
(A) (B) (C) (D)

Q.23 An OP-AMP as a comparator is a circuit that compares the signal voltage on one of its inputs with a/an
A) Non-inverting voltage at output
B) Reference voltage on the other
C) Virtual input
D) Output
(A) (B) (C) (D)

Q.24 If $R_2 = 500\ \Omega$ and $R_1 = 50\ \Omega$ then gain of inverting amplifier is
A) 10
B) 0.1
C) 2.5
D) 2.5×10^4
(A) (B) (C) (D)

Q.25 Inverting amplifier circuits have
A) A very high input impedance
B) A very low input impedance
C) A low output impedance
D) Both A and C
(A) (B) (C) (D)

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Q.26	**The simplest type of rectification known as half wave rectification is obtained by** A) Using a transistor B) Suppressing the harmonics in A.C voltage C) Suppressing half wave of A.C supply by using diode D) Using a Coolidge tube	(A) (B) (C) (D)
Q.27	**The unit of gain (G) for non-inverting amplifier is** A) Ampere B) Volt C) Ohm D) None of these	(A) (B) (C) (D)
Q.28	**The diodes works on** A) A.C B) D.C C) both "a" and "b" D) none of these	(A) (B) (C) (D)
Q.29	**In a photovoltaic cell the current is directly proportional to the** A) intensity of incident light B) frequency of incident light C) energy of incident energy D) all of these	(A) (B) (C) (D)
Q.30	**The colour of light emitted by a LED depends on** A) its forward bias B) its reverse bias C) forward current D) material used	(A) (B) (C) (D)

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KIPS UNIT – 11

UHS TOPIC – 15
F.Sc: Chapter # 17+19+20

Modern Physics
MCQs: 4

LEARNING OUTCOMES

1. ENERGY OF PHOTON E = HF
2. PHOTOELECTRIC EFFECT
   - Threshold frequency
   - Work function energy.
   - Difference between intensity and energy
   - Einstein's Photo Electric Equation $hf = \phi + \frac{1}{2}mv^2_{max}$.
3. DE BROGLIE WAVELENGTH AND USE $\lambda = \frac{h}{p}$.
4. DISCRETE ENERGY LEVELS OF HYDROGEN ATOM AND SPECTRAL LINES
   - Spectroscopy
   - Balmer Series
   - Paschen series
   - Brackett Series
   - Lyman Series
   - Pfund Series
5. USE THE RELATION $hf = (E_2 - E_1)$.
6. X-RAYS
   - Production of X-rays
   - Feature of X-ray tube
   - Characteristic X-rays
   - Continuous X-rays
   - Continuous X-rays Spectrum
   - Uses of X-rays
7. ENERGY BAND THEORY AND ITS TERMS VALENCE BAND, CONDUCTION BAND AND FORBIDDEN BAND

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KIPS SELF ASSESSMENT TEST

Q.1 **Who discovered X-rays?**

A) Roentgen
B) Marie curie
C) Rutherford
D) All

Q.2 **Consider a photon of continuous X-rays coming from a Coolidge tube. Its energy comes from**

A) KE of the striking electron
B) KE of free electron of the target
C) KE of the ions of the target
D) An atomic transition in the target

Q.3 **For harder X-rays**

A) Wavelength is higher
B) Intensity is higher
C) Frequency is higher
D) All of these

Q.4 **X-rays are absorbed maximum by?**

A) Lead
B) Copper
C) Paper
D) Steel

Q.5 **Water is circulated in Coolidge tube to**

A) Cool the target
B) Cool both cathode and target
C) Cool the cathode
D) None of these

Q.6 **If the incident electrons in Coolidge tube are accelerated through a potential of V volt, then the maximum frequency of continuous X-rays will be**

A) V
B) $\frac{eV}{h}$
C) hV
D) $\frac{h}{eV}$

Q.7 **If anode potential of X-rays tube increase then**

A) Bremsstrahlung radiation wavelength increases
B) Characteristic wavelength increases
C) Bremsstrahlung radiation wavelength decreases
D) Characteristic wavelength decreases

Q.8 **Electrons of mass m and charge e are accelerated through a potential difference V and strike the target. The maximum speed of these electrons is**

A) $\frac{eV}{m}$
B) $\frac{eV^2}{m}$
C) $\sqrt{\frac{eV}{m}}$
D) $\sqrt{\frac{2eV}{m}}$

Q.9 **X-rays cannot produce**

A) Compton effect
B) Photoelectron
C) Electron-positron pair
D) All of the above

Q.10 **X-ray region is situated between**

A) Visible and short radio wave regions
B) Ultraviolet and visible regions
C) γ-rays and ultraviolet regions
D) Short and long radio wave regions

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Q.11 When electrons lose their all K.E in striking electrons producing X-rays then

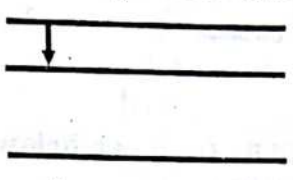
A) $K.E = eV$

B) $K.E = \frac{h\lambda_{min}}{C}$

C) $K.E = \frac{hc}{\lambda_{min}}$

D) $K.E = \frac{h}{\lambda_{min}}$

Q.12 Transition gives rise to an X-rays. The correct label for this



A) L_α

B) L_β

C) K_α

D) K_β

Q.13 High energy photon emitted due to transition of inner shell electrons in heavy atom are called

A) K-photons

B) Heavy photons

C) Continuous X-Rays

D) Characteristics X-Rays

Q.14 When large number of atoms are present in the excited state than ground state then such a state is called

A) Population inversion

B) Ground state

C) Excited state

D) Normal state

Q.15 Characteristic X-rays are produced by energy changes in

A) The nucleus

B) Electron far from the nucleus

C) Electrons close to the nucleus

D) Electrons and protons

Q.16 An X-ray photon produced due to transition of electron from M-shell to K-shell is called:

A) K_α

B) K_γ

C) K_β

D) none of these

Q.17 Which of the following X-rays has greater intensity?

A) K_α

B) K_β

C) K_γ

D) All have same

Q.18 Kinetic energy of electrons by applying potential difference V_1 across the X-ray tube is KE_1 while V_2 potential difference produces kinetic energy equal to KE_2. What will be the value of $KE_1 : KE_2$ if ratio of potential difference $V_1:V_2 = 2:3$?

A) 3:2

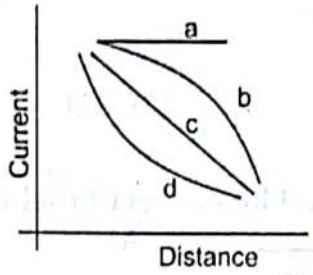
B) 4:9

C) 9:4

D) 2:3

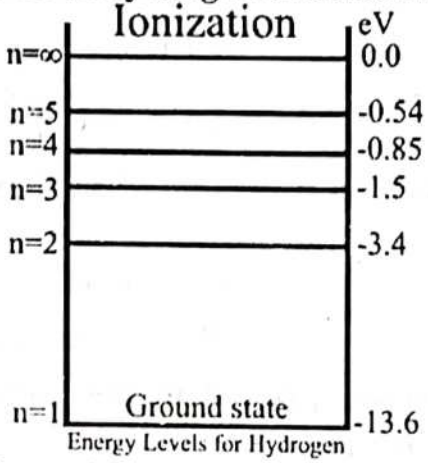
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Q.19 A point source causes photoelectric effect from a small metal plate. Which of the curve in the figure may represent the saturation photocurrent as a function of the distance between the source and the metal?



A) a
B) b
C) c
D) d

Q.20 Some of the energy levels of hydrogen are shown below (not to scale).



Energy Levels for Hydrogen

Which transition will result in the emission of the photon with the greatest energy?

A) n = 5 to n = 5
B) n = 5 to n = 2
C) n = 5 to n = 3
D) n = 2 to n = 1

Q.21 Stopping potential does not depend upon

A) Frequency of light
B) Intensity of light
C) Wavelength of light
D) All of these

Q.22 If the electron in a hydrogen atom jumps from the third orbit to second orbit the emitted radiation has wavelength

A) 5/36 R
B) 36/5 R
C) 6/5 R
D) 5 R/6

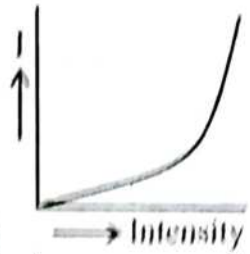
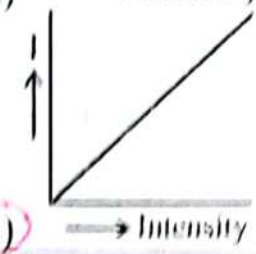
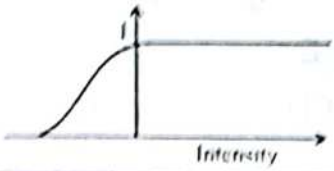
Q.23 A photon whose energy is E_p joules strikes a photosensitive surface whose work function is ϕ joules. The maximum energy of the ejected photoelectron is equal to

A) E_p
B) $\phi - E_p$
C) $\phi + E_p$
D) $E_p - \phi$

Q.24 An electron of hydrogen is present in the 3.4 eV energy state. Find the angular momentum of the electron.

A) $\frac{2h}{\pi}$
B) $\frac{h}{\pi}$
C) $\frac{3h}{2\pi}$
D) $\frac{4h}{\pi}$

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Q.25	**In terms of the Bohr radius a_0 the radius of the second Bohr orbit of a hydrogen atom is given by** A) $4a_0$ C) $8a_0$ B) $\sqrt{2}a_0$ D) $2a_0$	(A) (B) (C) (D)
Q.26	**The ratio of the K.E & the P.E of electron in hydrogen atom will be.** A) 1 : 2 C) 2 : 1 B) 1 : − 2 D) − 2 : 1	(A) (B) (C) (D)
Q.27	**The experimental value of Rydberg constant is** A) $1.097 \times 10^8\ m^{-1}$ C) $1.097 \times 10^8\ m^{-1}$ B) $1.097 \times 10^7\ m^{-1}$ D) $1.097 \times 10^7\ m^{-1}$	(A) (B) (C) (D)
Q.28	**Number of the emission spectra are** A) One C) Three B) Two D) Four	(A) (B) (C) (D)
Q.29	**Which one of the following graphs in the figure shows the variation of photoelectric current (I) with intensity of light in photo electric cell** A)  C)  B)  D) 	(A) (B) (C) (D)
Q.30	**A Balmer line is emitted when the electron in a hydrogen atom jumps from** A) a higher orbit to the first orbit B) a higher orbit to the second orbit C) the first orbit to a higher orbit D) the second orbit to a higher orbit	(A) (B) (C) (D)

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KIPS UNIT – 12

UHS TOPIC – 16
F.Sc: Chapter # 21

Nuclear Physics
MCQs: 3

LEARNING OUTCOMES

1. NUCLEAR PHYSICS

- Atomic Mass number ☐
- Atomic Number ☐
- Concept of Nucleons ☐

2. MASS DEFECT AND BINDING ENERGY

- Mass defect per nucleon ☐
- Binding energy per nucleon ☐
- Stable Elements ☐
- Unstable elements ☐
- Heavy elements ☐

3. RADIOACTIVITY

- Concept of radioactivity ☐
- Type of Radioactive rays ☐
- Properties of radioactive radiation. ☐
- Activity ☐
- Problem solving relation using $Activity = -\lambda N$ ☐

4. HALF LIFE

- Concept of Decay constant ☐
- Problem using relation $\lambda = \frac{0.693}{T_{1/2}}$ ☐

5. NUCLEAR TRANSMUTATION

- α-decay ☐
- β–decay ☐
- γ–decay ☐
- Conservation of mass, energy, momentum and charge during nuclear changes ☐

6. NUCLEAR REACTIONS

- Fission Reaction ☐
- Fusion Reaction ☐

7. CONCEPT OF HADRONS, LEPTONS AND QUARKS. ☐

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KIPS SELF ASSESSMENT TEST

Q.1 Radioactivity was discovered by
A) J.J. Thomson
B) W. Roentgen
C) H. Becquerel
D) M. Curie

Q.2 In an α-decay
A) The Parent and daughter nuclei have the same number of protons
B) The daughter nucleus has one proton more than the parent nucleus
C) The daughter nucleus has two protons less than the parent nucleus
D) The parent and daughter nuclei have the same number of neutrons

Q.3 The half-life of the isotope $^{24}_{11}\text{Na}$ is 15 hours. How much times does it take for $\frac{7}{8}$ th of a sample of this isotope to decay?
A) 75 h
B) 55 h
C) 65 h
D) 45 h

Q.4 In the reaction: $^{24}_{12}Mg + ^{4}_{2}He \rightarrow ^{x}_{14}Si + ^{1}_{0}n$, x is:
A) 28
B) 26
C) 27
D) 22

Q.5 The most penetrating radiation out of the following is:
A) X-rays
B) β – rays
C) α -rays
D) γ – rays

Q.6 Half-life of a radioactive material depends on:
A) Temperature
B) Quantity of the material
C) Nature of the material
D) All

Q.7 What fraction of a radioactive material will get disintegrated in a period of two half-lives?
A) Whole
B) One-fourth
C) Half
D) Three-fourth

Q.8 Three fourths of the radioactive nuclei present in a radioactive sample decay in $\frac{3}{4}s$. The half-life of the sample is:
A) $\frac{3}{4}s$
B) $1\ s$
C) $\frac{3}{8}s$
D) $\frac{1}{2}s$

Q.9 When a radioactive isotope $_{88}\text{Ra}^{228}$ decays in series by the emission of three α particles and a β particle, the isotope finally formed is
A) $_{83}X^{216}$
B) $_{84}X^{220}$
C) $_{86}X^{222}$
D) $_{88}X^{215}$

Q.10 The phenomenon of spontaneous disintegration of heavier elements (Z>82) into lighter nuclei with the emission of three types of radiation is
A) Radioactivity
B) Resistivity
C) Conductivity
D) Population inversion

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Q.11 Which one of the following is undeflected by electric or magnetic field
A) Electrons
B) β-particles
C) α-particles
D) γ-particles

Q.12 One curie is equal to
A) 3.70×10^{10} Bq
B) 3.70×10^{10} Henry
C) 3.7×10^{16} Bq
D) 3.7×10^{25} Bq

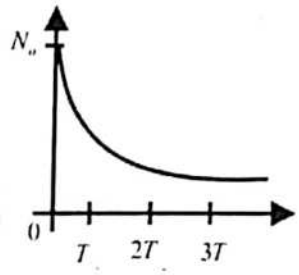
Q.13 The percentage of the original of a radioactive material left after five half-lives is approximately:
A) 1%
B) 5%
C) 3%
D) 20%

Q.14 The half-life of a radioactive element which has only $\frac{1}{32}$ of its original mass left after a lapse of 60 days is:
A) 12 days
B) 60 days
C) 32 days
D) 64 days

Q.15 In the following nuclear reaction, how many α and β particles are emitted? ${}_{92}X^{235} \rightarrow {}_{82}Y^{207}$
A) 3 α-particles and 2 β-particles
B) 6 α-particles and 2 β-particles
C) 7 α-particles and 2 β-particles
D) 4 α-particles and 2 β-particles

Q.16 A substance reduces to $\frac{1}{16}$ th of its original mass in 2 hours. The half-life period of the substance is:
A) 120 min
B) 30 min
C) 15 min
D) 60 min

Q.17 The graph for half-life of radiations is shown in fig. The graph is called:



A) Linear curve
B) Hyperbola curve
C) Parabolic curve
D) Decry curve

Q.18 The decay constant (λ) and the half life (T) of a radioactive isotopes are related as
A) $\lambda = \frac{\ln 2}{T}$
B) $\lambda = \frac{T}{\ln 2}$
C) $\lambda = \frac{1}{(\ln 2)T}$
D) $\lambda = \frac{2}{T}$

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Q.19 The fission of U^{238} is possible by

A) Only fast neutrons
B) Fast as well as slow neutrons
C) Only slow neutrons
D) Fast protons

(A) (B) (C) (D)

Q.20 The Sr_{38}^{90} having decay constant $7.83\times10^{-10}\ s^{-1}$ contains 6.69×10^{21} atoms, the activity of Sr_{38}^{90} is

A) $5.23\ s^{-1}$
B) $5.23\times10^{11}\ s^{-1}$
C) $3.5\times10^{10}\ s^{-1}$
D) $5.23\times10^{12}\ s^{-1}$

(A) (B) (C) (D)

Q.21 How many up quarks and down quarks must a proton contain?

	Up quarks	Down quarks
A)	0	3
B)	1	1
C)	1	2
D)	2	1

(A) (B) (C) (D)

Q.22 One reaction which might be used for controlled nuclear fusion is shown.

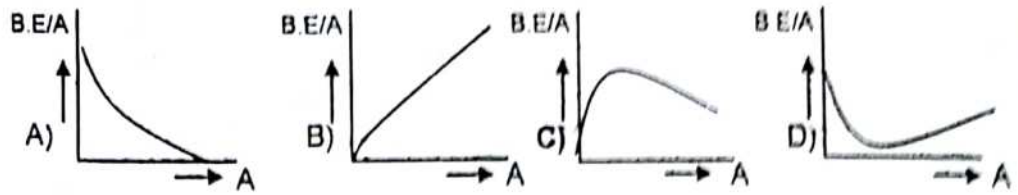
$$^{7}_{3}Li + {}^{2}_{1}H \longrightarrow 2\left({}^{4}_{2}He\right) + X^{1}_{0}$$

What is particle X?

A) An α-particle
B) An electron
C) A neutron
D) A proton

(A) (B) (C) (D)

Q.23 Which sketch graph best represents the variation of binding energy per nucleon with nucleon number



(A) (B) (C) (D)

Q.24 Which of the following factor measure the stability of radioactive element?

A) average live
B) Total life
C) Half life
D) All of these

(A) (B) (C) (D)

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Q.25	**For atomic nucleus, the binding energy per nucleon ____ with increase in mass number** A) Increases continuously B) Decrease continuously C) Remains constant D) First increases and then decreases with increase in mass number	Ⓐ Ⓑ Ⓒ Ⓓ
Q.26	**The best place to store/dump nuclear waste is** A) Under the sea B) Into the soil C) Under the old salt mines D) All of these	Ⓐ Ⓑ Ⓒ Ⓓ
Q.27	**A fusion reaction is initiated with help of** A) High temperature B) Neutrons C) Low temperature D) α particles	Ⓐ Ⓑ Ⓒ Ⓓ
Q.28	**The mass of the nucleus is always less that the total mass of the protons and neutrons that make up the nucleus. The difference of the two masses is called** A) Mass defect B) Binding energy C) Mass excess D) Packing fraction	Ⓐ Ⓑ Ⓒ Ⓓ
Q.29	**Quarks are basic building block of** A) Mesons B) Electrons C) Baryons D) a and b	Ⓐ Ⓑ Ⓒ Ⓓ
Q.30	**One atomic mass unit is equal to** A) Mass of one atom of hydrogen B) Mass of one atom of $_6C^{12}$ C) $\frac{1}{12^{th}}$ of the mass of one atom of $_6C^{12}$ D) 10^{-27} kg	Ⓐ Ⓑ Ⓒ Ⓓ

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Topic – 1

Agreement Mistakes
MCQs: 15

LEARNING OUTCOMES

1. Agreement between subject and Verb/H.V ☐
2. Agreement between subject word – 1 and H/H.V ☐
3. Agreement between subject word – 2and H/H.V ☐
4. Two subject words joined by "and" and Verb of Helping Verb ☐
5. Verb or Helping Verb after "who-which that" ☐
6. Subject word with confusing S and Verb or Helping Verb ☐
7. Fraction / Portion / Percentage and Verb or Helping Verb ☐
8. Quality / Amount and Verb or Helping Verb ☐
9. Adjective with Article "The" and Verb or Helping Verb ☐
10. Agreement between Noun and Pronoun. ☐
11. Agreement between Noun and Possessive Adjective ☐
12. Agreement between Noun and Relative Pronoun ☐
13. Agreement between Noun and its quantifier ☐
14. Phrase or clause as a subject and Verb or Helping Verb ☐
15. Inversion of Helping Verb and Subject ☐
16. Agreement between H.V and form of verb ☐

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Q.1	English grammar *and* knowing how to use grammar effectively *is* (A) (B) (C) (D) important for a good communicator.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	Some animals, such as the hedgehog, appear quite timid but they can (A) (B) (C) become fierce enemies when they perceive a threat to their baby. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	The object of the game of chess is to put the other player's king in a vulnerable (A) (B) (C) position, so that you can eventually capture them (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	Some books contend that, as a student familiarizes himself with early American history, one must keep in mind that certain parts of history are recounted by (A) (B) (C) (D) those who lived it and are therefore subjective.	Ⓐ Ⓑ Ⓒ Ⓓ B
Q.5	There is certainly sufficient reasons for his being rejected by the (A) (B) (C) group's membership. (D)	D ✗ A ✓
Q.6	Having studied your report carefully, I am convinced that neither of (A) (B) (C) your solutions are correct. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	The influence of radio on American life during the Depression years (A) (B) were profound. (C) (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	A) The opponents of the garage plan use the council meetings as a forum to vent their anger and to ridicule the council, taking their time and showing disrespect. B) The opponents of the garage plan use the council meetings as a forum to vent their anger and to ridicule the council, by taking their time as well as showing disrespect. C) The opponents of the garage plan use the council meetings as a forum to vent their anger and to ridicule the council, taking their time and showing their disrespect. D) The opponents of the garage plan use the council meetings as a forum to vent their anger and to ridicule the council, taking its time and showing disrespect.	Ⓐ Ⓑ Ⓒ Ⓓ ✓

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Q.9	A) When you look at a sixteenth-century painting of the Annunciation by Lorenzetti or Giotto, one may notice certain sartorial or architectural details outlined in gold leaf. B) When you look at a sixteenth-century painting of the Annunciation by Lorenzetti or Giotto, people may notice certain sartorial or architectural details outlined in gold leaf. C) When you look at a sixteenth-century painting of the Annunciation by Lorenzetti or Giotto, you may notice certain sartorial or architectural details outlined in gold leaf. D) When you look at a sixteenth-century painting of the Annunciation by Lorenzetti or Giotto, one may be noticing certain sartorial or architectural details outlined in gold leaf.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	A) Neither the Florida coast nor the Caribbean islands was prepared for the series of hurricanes that devastated the region in 2004. B) Neither the Florida coast nor the Caribbean islands have been prepared for the series of hurricanes that devastated the region in 2004. C) Neither the Florida coast or the Caribbean islands were prepared for the series of hurricanes that devastated the region in 2004. D) Neither the Florida coast nor the Caribbean islands were prepared for the series of hurricanes that devastated the region in 2004.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	A) The debate coach, together with the members of the winning team, is traveling to Washington for the awards ceremony. B) The debate coach, along with the members of the winning team, they are traveling to Washington for the awards ceremony. C) The debate coach, along with the members of the winning team, are traveling to Washington for the awards ceremony. D) The debate coach, together with the members of the winning team, are traveling to Washington for the awards ceremony.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	A) So many of the internal workings of the lungs change at night that lung diseases, particularly asthma, has become the best studied of the nighttime illnesses B) So many of the internal workings of the lungs change at night that lung diseases, particularly asthma, has become the best studied'nighttime illnesses C) So many of the internal workings of the lungs change at night that lung diseases, particularly asthma, has become the better studied of the nighttime illnesses D) So many of the internal workings of the lungs change at night that lung diseases, particularly asthma, have become the best studied of the nighttime illnesses	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.13	A) A recipe with more then six ingredients are too complicated. B) A recipe with more than six ingredients is too complicated. C) A recipe with more than six ingredients are too complicated. D) A recipe with more than six ingredients is to complicated.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	A) For recreation I like to watch these kind of programs in the evening. B) For recreation I like to watch these sort of programs in the evening. C) For recreation I like to watch these kinds of programs in the evening. D) For recreation I like to watch them kinds of programs in the evening.	Ⓐ Ⓑ Ⓒ Ⓓ C
Q.15	A) Carlos is the only one of those students who has lived up to the potential described in the yearbook. B) Carlos is the only one of those students which have lived up to the potential described in the yearbook. C) Carlos is the only one of those students that were lived up to the potential described in the yearbook. D) Carlos is the only one of those students who is lived up to the potential described in the yearbook.	Ⓐ Ⓑ Ⓒ Ⓓ

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LEARNING OUTCOMES

1.	Contrast signal words	☐
2.	Synonym signal words	☐
3.	Cause and effect	☐
4.	Defining characteristics (definition)	☐
5.	Key words	☐
6.	Think of a the word that makes a common sense	☐
7.	Clues with reference to the context	☐
8.	Placing and replacing	☐
9.	Excluding the options	☐
10.	Beware of eye catchers	☐
11.	Beware of negative words and negative prefixes	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**Despite the _____ of the material with which he worked, many of Tiffany's glass masterpiece have survived for more than seventy years.** A) Beauty B) Translucence C) Abundance D) Fragility	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	**Normally an individual thunderstorm lasts about 45 min, but under certain Conditions the storm may _____, becoming evermore severe, for as long as four hours.** A) Wane B) Moderate C) Persist D) Vacillate	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	**Bob could have _____ in the examination in spite of his efforts, had the examination been more difficult.** A) Managed. B) Failed C) Competed D) Passed	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	**In giving a speech, the speaker's goal is to ..municate ideas clearly and _____ so, that the audience will be in no _____ about the meaning of the speech.** A) Effectively … haste B) Indirectly …distress C) Vigorously … discomfort D) Tactfully … suspense	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	**As news of his indictment spread through the town, the citizens began to _____ him and to avoid meeting him** A) Ostracize B) Congratulate C) Desecrate D) Minimize	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	**High inflation usually leads to high interest rates. Similarly, interest rates decline when inflation is _____.** A) high B) increasing C) low D) continuing	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	**My doctor said that I need more exercise, so I _____the time I spend _____.** A) increased … running B) continued … eating C) passed … sleeping D) decreased … jogging	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	**Because this suit was on sale, I got it for a _____ price.** A) higher B) similar C) lower D) worse	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	**Someone had removed all the evidence. Thus, it was now _____ for the police to continue their investigation.** A) better B) impossible C) easy D) convenient	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	**There is no doubt that Larry is a genuine -------: he excels at telling stories that fascinate his listeners.** A) braggart B) pilferer C) dilettante D) raconteur	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	**Your _____ remarks spoil the effect of your speech; try not stray from your subject.** A) Innocuous B) Digressive C) Derogatory D) Persistent	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.12	**Breaking with established artistic traditions, Dali' was a genius whose ____ works infuriated the traditionalists of his day.** A) Heterodox C) Magnanimous B) Insignificant D) Uncontroversial	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	**The increasingly popular leader of America's second largest tribe. Cherokee Chief Wilma Man killer has _____ the myth that only males could be leader in American Indian government.** A) Shattered C) Exaggerated B) Perpetuated D) Confirmed	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**The commission of inquiry censured the senator for his _____ expenditure of public funds, which they found to be _____.** A) Flagrant … .cursory C) Lavish … unjustifiable B) Improper … vindicated D) Judicious …blameworthy	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**In a revolutionary development in technology, several manufacturers now make biodegradable forms of plastic; some plastic rings, for example gradually _____ when exposed to sunlight.** A) Harden C) Inflate B) Stagnate D) Decompose	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**The young man was quickly promoted when his employers saw how _____ he was.** A) Indigent C) Assiduous B) Indifferent D) Lethargic	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Because it arrives so early in the season before many other birds the robin has been called the _____ of spring.** A) Hostage C) Compass B) Autocrat D) Harbinger	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**When such _____ remarks are circulated, we can only blame and despise those who produce them** A) Adulatory C) Rhetorical B) Chance D) Reprehensible	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**In the view of the existing circumstances and the defendant's youth, the judge recommended_____.** A) Conviction C) A mistrial B) A defense D) Leniency	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**People should not be praised for their virtue if they lack the energy to be _____; in such cases, goodness is merely the effect of _____.** A) Depraved …hesitation C) Wicked … indolence B) Cruel ……effortlessness D) Unjust … ….boredom	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS VOCABULARY UNIT–1

Topic – 3

Vocabulary 1-100
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**ABSTRUSE** A) Entire B) Enlightening	C) Perplexing D) Inspiring	(A) (B) (C) (D)
Q.2	**ADDLED** A) Intricate B) Perplexed	C) Combined D) Dispersed	(A) (B) (C) (D)
Q.3	**AMENITIES** A) Felicities B) Facilities	C) Fatalities D) Mortalities	(A) (B) (C) (D)
Q.4	**ANTERIOR** A) Front B) Proceeding	C) Old D) Receding	(A) (B) (C) (D)
Q.5	**ARCANE** A) Enigmatic B) Analgesic	C) Feasible D) Legible	(A) (B) (C) (D)
Q.6	ASPERSION A) Aspiration B) Commendation	C) Defamation D) Anticipation	(A) (B) (C) (D)
Q.7	**Axial** A) Outline B) Bottom line	C) Top line D) Centre line	(A) (B) (C) (D)
Q.8	**BEGUILE** A) Captivate B) Castigate	C) Ruminate D) Amputate	(A) (B) (C) (D)
Q.9	**BLASPHEMOUS** A) Unknown B) Unholy	C) Unpopular D) Unusual	(A) (B) (C) (D)
Q.10	**CAPABLE** A) Adept B) Alert	C) Diligent D) Destitute	(A) (B) (C) (D)
Q.11	**CAPSULE** A) Coot B) Rod	C) Pod D) Nod	(A) (B) (C) (D)
Q.12	**CARDIGAN** A) Razor B) Laser	C) Blazer D) Wager	(A) (B) (C) (D)

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Q.13	**BURGEONING** A) Demanding B) Grooming C) Developing D) Declining	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**BLOOM** A) Gloom B) Glow C) Grooming D) Grim	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**BEHEST** A) Subjugation B) Interaction C) Instruction D) Sublimation	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Basic _____ including toilet facilities and drinking water would be provided.** A) Archives B) Beneficence C) Amenities D) Caricatures	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Indeed, as government ministers go he is one of the more _____ and intelligent.** A) Altruistic B) Auspicious C) Arcane D) Articulate	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Traditionally, not only property is ____, but social and political position as well.** A) Allay C) Accolade B) Bequeath D) Berate	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**The US government in its own inimitable fashion has been firing _____ against everyone opposed to its continuation.** A] Broadside B) Behest C) Bloom D) Beguile	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**I am planning to knit a little flower to stitch onto the front of the _____ to liven it up a little.** A) Cardigan B) Cachet C) Carapace D) Camber	Ⓐ Ⓑ Ⓒ Ⓓ

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LEARNING OUTCOMES

1.	Combination of words (general)	☐
2.	Combination of clauses (FAN BOYS)	☐
3.	Combination of words (Collocation etc.)	☐
4.	Combination of sentences (Conditional and compound)	☐

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KIPS SELF ASSESSMENT TEST

Q.1	The physicians particularly enjoyed (A) the afternoon workshop offered (B) by the retired doctor who has been (C) to India during (D) a serious outbreak of smallpox.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	She was (A) working in that company for twenty years (B) when (C) she was made (D) redundant.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	Joe plans to wear neither (A) Bob's Klingon (B) costume nor (C) to wear (D) last year's Superman costume.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	Joe would (A) rather (B) stay home then (C) wear Bob's (D) ratty Klingon uniform.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	Susan has not yet decided whether (A) to wear (B) Bob's Klingon costume or (C) stay (D) home from the con.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	Does anyone (A) know whether (B) the president and (C) the vice president was (D) responsible for providing the announcement to the press?	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	I was (A) undecided about my major when I was (B) a freshman. I wanted (C) to study journalism so (D) I like art, too	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	A) Joe owns a pair of blue gauze wings with sequins so he will dress either as a fairy or as a butterfly. B) Joe owns a pair of blue gauze wings with sequins, so he will dress either as a fairy or that a butterfly. C) Joe owns a pair of blue gauze wings with sequins, so he will dress either as a fairy or as a butterfly. D) Joe owns a pair of blue gauze wings with sequins, so he will dress either as a fairy nor as a butterfly.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	A) I saw the nests that the robins built both on the porch and in the tree. B) I saw the nests that which the robins built both on the porch and in the tree. C) I saw the nests that the robins built both on the porch or in the tree. D) I saw the nests that the robins built both on the porch as well as in the tree.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	A) Susan not only wants to wear Joe's wings herself but also she is angry that he refused her plea to borrow them. B) Susan not only wants to wear Joe's wings herself but also is angry that he refused her plea to borrow them. C) Susan not only wants to wear Joe's wings herself but is angry that he refused her plea to borrow them. D) Susan not only wants wearing Joe's wings herself but also is angry that he refused her plea to borrow them.	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.11	Everyone in the bank, including the manager and the tellers, ran to the door when the fire alarm rang. A) Everyone in the bank, included the manager and the tellers, runned to the door when the fire alarm rang. B) Everyone in the bank, including the manager and the tellers: ran to the door when the fire alarm rang. C) Everyone in the bank, included the manager and the tellers, had run to the door when the fire alarm rang. D) Everyone in the bank, including the manager and the tellers, ran to the door when the fire alarm rang.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	A) If I want to sell my car, I put an advertisement in the newspapers. B) If I wanted to sell my car, I would put an advertisement in the newspapers. C) If I wanted to sell my car, I would have put an advertisement in the newspapers. D) If I would want to sell my car, I would put an advertisement in the newspapers.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	A) The builders say they will have finished the roof by Monday. B) The builders will say they will have finished the roof by Monday. C) The builders say they will finish the roof by Monday. D) The builders says they will have finished the roof by Monday.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	A) We don't have a telephone, therefore you will have to come round to the house. B) We don't have a telephone, so you will have to come round to the house. C) We don't have a telephone, but you will have to come round to the house. D) We don't have a telephone; so you will have to come round to the house. We can use a coordinating conjunction (and, but, for, nor, or, so, yet) to create a compound sentence.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	A) If he would have read "The White Birds," he might have liked William Butler Yeats' poetry. B) If he would of read" The White Birds," he might have liked William Butler Yeats' poetry. C) If he could of read" The White Birds," he might have liked William Butler Yeats' poetry. D) If he had read" The White Birds," he might have liked William Butler Yeats' poetry.	Ⓐ Ⓑ Ⓒ Ⓓ

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Topic – 5

Vocabulary 101-200
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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Q.1	**CATALYST**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Stimulus	C) Analyst	
	B) Nucleus	D) Racist	
Q.2	**CAULK**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Zeal	C) Congeal	
	B) SealD) Squeal		
Q.3	**CLAMOROUS**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Erroneous	C) Pretentious	
	B) Dubious	D) Uproarious	
Q.4	**CLUSTER**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Swarm	C) Disperse	
	B) Strew	D) Isolate	
Q.5	**COLLAGE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Conversion	C) Chronicle	
	B) Draft	D) Composition	
Q.6	**COMELY**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Unctuous	C) Gorgeous	
	B) Ferocious	D) Gracious	
Q.7	**COMPARTMENTS**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Chamber	C) Vacuum	
	B) Tramp	D) Ledge	
Q.8	**CONCILIATORY**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Sensible	C) Peaceable	
	B) Feasible	D) Mutual	
Q.9	**CONFOUND**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Diffuse	C) Confuse	
	B) Infuse	D) Excuse	
Q.10	**CORPUSCLE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Plateless	C) Platelets	
	B) Pallets	D) Plates	
Q.11	**COVERT**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Concealed	C) Evident	
	B) Converted	D) Vivid	
Q.12	**CYNICAL**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Rocking	C) Poking	
	B) Shocking	D) Mocking	
Q.13	**DEBUNK**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Disown	C) Discredit	
	B) Disarm	D) Disdain	

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Q.14	**DELEGATE** A) Mediator C) Spokesperson B) Statesman D) Monitor	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**DEMOGRAPHICS** A) Statistics C) Illustration B) Demonstration D) Dramatics	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**The corollary to this is the claim that bureaucracy in police stations is _____.** A) Clamorous C) Chimerical B) Clement D) Comely	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Most people believe that children should be spared from _____ power dynamics.** A) Consulted C) Concave B) Congruent D) Coercive	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Most of the time he simply can't be bothered with it because he truly is lazy and _____.** A) Deferential C) Covered B) Complacent D) Defective	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**We wish them a hearty and _____ welcome and long and peaceful lives in our parish community.** A) Cordial C) Coronal B) Craven D) Crass	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**The idea that liberalism is something confined to a few _____ on the coasts is a shibboleth.** A) Deadheads C) Dale B) Delta D) Demographics	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS GRAMMAR UNIT – 3&4

Topic – 6

Mixed Topics
MCQs: 15

LEARNING OUTCOMES

1. Repetition or Doubling ☐
2. Redundancy ☐
3. Wordiness ☐
4. Fragment ☐
5. Run-On ☐
6. Parallelism ☐
7. Modifiers ☐

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KIPS SELF ASSESSMENT TEST

Q.1	With skill and surprising (A) gentleness the fireman managed to (B) lower the injured cat down (C) from the top of (D) the tree.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	Katz claimed that reading classic novels is (A) more illuminating (B) than to read (C) autobiographies written by (D) their authors.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	None of the presents I received (A) on my birthday this year was (B) equally as (C) memorable as the necklace you gave (D) me last year.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	I don't have nothing (A) against Sally and I know she was acting (B) in my best interest when (C) she scolded me in (D) front of everyone.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	In the entire (A) class. I have no idea who is the most (B) smartest (C), but I think it is the bookish (D) girl.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	The survey led to (A) a surprising conclusion; single dads have a totally different approach to (B) parenting from (C) a single mom. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	The boat could (A) not find nowhere (B) to dock, since the harbor, scarcely (C) large enough to begin with, was so overcrowded for the Holiday and no one (D) was directing traffic.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	A) After arduous months of fighting, the sight of the white flag being raised generated as much relief on the victor's side than it did on the vanquished. B) After arduous months of fighting, the sight of the white flag being raised generated as much relief among the victors as among the vanquished. C) After arduous months of fighting, the sight of the white flag being raised generated as much relief on the victor's side as it did on the vanquisher's. D) After arduous months of fighting, the sight of the white flag being rose generated relief both on the victor's side as well as on the vanquisher's.	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.9	A) My history class was reading a biography of the life of Abraham Lincoln. so my teacher decided we should visit the museum. B) Because my history class was reading a biography of the life of Abraham Lincoln, so my teacher decided we should visit the museum. C) Since my history class was reading a biography about Abraham Lincoln. so my teacher decided we should visit the museum. D) My history class was reading a biography about Abraham Lincoln, so my teacher decided we should visit the museum.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	A) Since I am well aware of your poor behavior, which is so bad that it could almost be called destructive. B) Because I am well aware of your poor behavior, which is so bad that it could almost be called destructive. C) Although I am well aware of your poor behavior, which is so bad that it could almost be called destructive. D) I am well aware of your poor behavior, which is so bad that it could almost be called destructive.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	A) I don't know why the doctor is always late; but it seems to be a pattern with him. B) I don't know why the doctor is always late; it seems to be a pattern with him. C) I don't know why the doctor was always late; it seems to be a pattern with him. D) I don't know why the doctor is always late, because it seems to be a pattern with him.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	A) I hoped that you would visit, that you would enjoy the city, and that you'd come back. B) I hoped that you would visit, that enjoy the city, and that you'd come back. C) I hoped that you would visit, that enjoy the city, and you'd come back. D) I hoped that you would visit, that you would enjoy the city, and that you would come back.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	A) Alice may could come to the party tomorrow, if her mother allows her to. B) Alice may be able to come to the party tomorrow if her mother allows her to. C) Tomorrow, Alice may could come to the party if her mother allows her to. D) Tomorrow, Alice may have come to the party if her mother allows her to.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	A) Dad's car broke down on the highway but he did not have enough credit on his phone to make a phone call. B) Dad's car broke down on the highway but he did not have enough credit on his phone to have a phone call. C) Dad's car broke down on the highway but he did not have enough credit on his phone to do a phone call. D) Dad's car broke down on the highway but he did not have enough credit on his phone to get a phone call.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	A) We were eager to get away from our everyday surroundings; our eyes hungered for new sights. B) We were eager to get away from our everyday surroundings, our eyes hungered for new sights. C) We were eager to get away from our everyday surroundings we longed to see new sights and meet new people. D) We were eager to get away from our everyday surroundings: our eyes hungered for new sights.	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS VOCABULARY UNIT – 3

Topic – 7

Vocabulary 201-300
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**DEMURE** A) Cheeky B) Modest	C) Unctuous D) Crass	(A) (B) (C) (D)
Q.2	**DEUCE** A) Default B) Deposit	C) Draw D) Deflate	(A) (B) (C) (D)
Q.3	**DEVIOUS** A) Ingenuous B) Scrupulous	C) Ingenious D) Treacherous	(A) (B) (C) (D)
Q.4	**DIFFIDENCE** A) Eminence B) Dominance	C) Reluctance D) Competence	(A) (B) (C) (D)
Q.5	**DISABILITY** A) Malady B) Molody	C) Felicity D) Solace	(A) (B) (C) (D)
Q.6	**DISDAIN** A) Distrust B) Disgust	C) Conquest D) Triumph	(A) (B) (C) (D)
Q.7	**DISSENT** A) Opposition B) Compliance	C) Endurance D) Downfall	(A) (B) (C) (D)
Q.8	**DOCENT** A) Solicitor B) Constructor	C) Instructor D) Prosecutor	(A) (B) (C) (D)
Q.9	**ELICIT** A) Derive B) Detain	C) Drag D) Drab	(A) (B) (C) (D)
Q.10	**EMBED** A) Intoxicate B) Mix	C) Sicken D) Fix	(A) (B) (C) (D)
Q.11	**ENVIRONMENT** A) Earth B) World	C) Atmosphere D) Universe	(A) (B) (C) (D)
Q.12	**EVALUATE** A) Assess B) Distress	C) Articulate D) Exasperates	(A) (B) (C) (D)
Q.13	**EXCAVATE** A) Unload B) Engrave	C) Enslave D) Unearth	(A) (B) (C) (D)

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Q.14	**EXPLOITATION** A) Immunization B) Utilization	C) Indemnity D) Exhaustion	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**EXTRICATE** A) Release B) Charm	C) Repel D) Propel	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**It is basically a wide stripe that runs from _____ chief to sinister base.** A) Diffident B) Dunce	C) Dexter D) Dictated	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Anne turned after _____ her information and went back to the story.** A) Dominant B) Dissenting	C) Duplicitous D) Divulging	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**A few years later, Old Lyme would become the _____ for the disease; and those once-annoying deer ticks were suddenly noxious.** A) Equipoise B) Eponym	C) Espalier D) Evasive	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**He was _____ from a city school in second year and was heading straight for jail.** A) Expelled B) Excluded	C) Exonerated D) Extricated	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**Brighten up and refresh your mobile phone with a new _____, cover or housing.** A) Fascia B) Fateful	C) Facile D) Feckless	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS GRAMMAR UNIT – 9

Topic – 8

Verb and Tenses
MCQs: 15

LEARNING OUTCOMES

1. Regular and Irregular ☐
2. Transitive and Intransitive ☐
3. The causative verb ☐
4. The subjunctive verbs ☐
5. The reflexive verbs ☐
6. Gerund versus Infinitive ☐
7. Infinitive "with to" and "without to" ☐

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KIPS SELF ASSESSMENT TEST

Q.1	It is critical that the prime minister addresses those sensitive issues A) B) C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	It has been ten years since he has broken his record. A) B) C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	Susie got her son take the medicine even though it tasted terrible. A) B) C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	If my cousin had been just a little taller, he could be a basketball player A) B) C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	I am unable to forgive a man who fails to return a book he had taken from A) B) C) D) my shelf	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	I'd rather not to go out at night; I'll wait till tomorrow. A) B) C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	By the time it is mid-summer, I will be working at this firm for about ten A) B) C) D) years.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	A) He suggested that she be more vocal in the next meeting. B) He suggested that she is more vocal in the next meeting. C) He suggested that she should be more vocal in the next meeting. D) He suggested that she to be more vocal in the next meeting.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	A) The girls have played a game called 'bomb' since almost ten minutes when the teacher suddenly will enter the classroom. B) The girls were playing a game called 'bomb' since almost ten minutes when the teacher suddenly entered the classroom. C) The girls had been playing a game called 'bomb' for almost ten minutes when the teacher suddenly entered the classroom. D) The girls played a game called 'bomb' for almost ten minutes when the teacher suddenly entering the classroom.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	A) If my application for the scholarship was accepted, I can continue my education in the States. B) If my application for the scholarship accepts, I will continue my education in the States. C) If my application for the scholarship had been accepted, I could have continued my education in the States. D) If my application for the scholarship will be accepted, I will continue my education in the States.	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.11	A) If he took an earlier train, he will be here by now. B) If he had taken an earlier train, he is here by now. C) If he would had taken an earlier train, he would be here by now. D) If he had taken an earlier train, he would have been here by now.	(A) (B) (C) (D)
Q.12	A) This weeks' baseball practice was missed because we had a dentist's appointment that we had to keep. B) We missed this week's baseball practice because we had a dentist's appointment that we had to keep. C) This week's baseball practice we missed because we had a dentist's appointment that we had to keep. D) We missed baseball practice that was this week because we had a dentist's appointment that we had to keep.	(A) (B) (C) (D)
Q.13	A) The professor told her class that a good way to improve listening skills was to watch television, especially news programs and documentaries. Universal fact? B) The professor told her class that a good way to improve listening skills is to watch television, especially news programs and documentaries. C) The professor told to her class that a good way to improve listening skills was to watch television, specially news programs and documentaries. D) The professor said her class that a good way to improve listening skills is to watch television, especially news programs and documentaries.	(A) (B) (C) (D)
Q.14	A) If you ask her more politely, she might help you. B) If you asked her more politely, she might have helped you. C) If you asked her more politely, she might help you. D) If you would ask her more politely, she might help you.	(A) (B) (C) (D)
Q.15	A) You say you allow to sit late to the dinner-table. I, on the contrary, do not permit any of my family members to be late even a second. B) You say you allow sitting late to the dinner-table. I, on the contrary, do not permit any of my family members to be late even a second. C) You say you allow have sat late to the dinner-table. I, on the contrary, do not permit any of my family members being late even a second. D) You say you allow being sat late to the dinner-table. I, on the contrary, do not permit any of my family members have been late even a second.	(A) (B) (C) (D)

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KIPS VOCABULARY UNIT – 4

Topic – 9

Vocabulary 301-400
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	FERMENTATION		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Poise	C) Elevation	
	B) Empowerment	D) Agitation	
Q.2	FILIGREE		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Menial work	C) Housework	
	B) Rough work	D) Lacework	
Q.3	FLUX		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Uneasiness	C) Invariable	
	B) Unsteadiness	D) Ineradicable	
Q.4	FROWSY		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Unmannerly	C) Untidy	
	B) Untimely	D) Unsteady	
Q.5	GAUDY		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Modest	C) Spontaneous	
	B) Elegant	D) Ostentatious	
Q.6	GIRDLE		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Belt	C) Butt	
	B) Bolt	D) Blink	
Q.7	GLIB		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Wavering	C) Promising	
	B) Fluent	D) Faithful	
Q.8	GREEN		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Withered	C) Developed	
	B) Unripe	D) Mellow	
Q.9	GUILELESS		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Shameless	C) Artless	
	B) Heartless	D) Witless	
Q.10	GURU		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Solicitor	C) Counselor	
	B) Prosecutor	D) Councilor	
Q.11	IMPETUOUS		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Feckless	C) Restless	
	B) Rakish	D) Reckless	
Q.12	INCARNATE		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Insubordinates	C) Heretical	
	B) Corporeal	D) Unctuous	
Q.13	INDICATES		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Demonstrate	C) Perish	
	B) Demolish	D) Lavish	

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Q.14	**INFORMATION** A) Archives B) Statistics C) Rudiments D) Rumination	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**INHERENT** A) Essential B) Eradicable C) Acquired D) Exotic	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**A knock at the door alarmed me and my silver _____ brush clanged off the glass vanity.** A) Finagle B) Forswear C) Filigree D) Flaunt	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**The risk of hip fracture increases with aging but the risk of wrist _____ does not.** A) Fragment B) Groove C) Genocide D) Fracture	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**A meeting was convened to discuss possible ways to prevent total _____.** A) Girdle B) Gridlock C) Gradient D) Herculean	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**He will need to compensate for his hearing _____ by using other senses to warn of dangers.** A) Impediment B) Improvisation C) Implication D) Impending	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**His mood was slightly more restrained when he eventually emerged from the _____.** A) Inquisition B) Indigence C) Information D) Inspiration	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS GRAMMAR UNIT – 7&10

Topic – 10

Adverb and Adjective
MCQs: 15

LEARNING OUTCOMES

ADVERB

1. Adverb with an "-ly" ☐
2. Adverb without an "-ly" ☐
3. Adverb with punctuation ☐
4. Order of Adverbs: ☐
   - Adjective + Adverb (enough)
   - MPT Formula
   - Ascending order of Adverbs
   - Word + Phrase + Clause Adverbials
5. Spelling errors of Adverbs ☐
6. Important Pairs of Adverbs ☐

ADJECTIVES

1. Four point Agenda ☐
2. Use of double comparative and superlative ☐
3. Possessive adjective and verbal Nouns (Gerund) ☐
4. Faulty Comparison ☐
5. Adjective and Articles ☐
6. Adjective and Punctuation ☐
7. Adjective and preposition / infinitive ☐
8. Order of Adjective ☐
9. Important Pairs ☐

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KIPS SELF ASSESSMENT TEST

Q.1	He hoped that he would learn <u>to quickly run</u> <u>so</u> that he <u>could win</u> the (A) (B) (C) race, and be the <u>best runner</u> (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	According to the dean, the goal <u>of</u> <u>gainfully</u> employment is <u>apparently</u> to (A) (B) (C) protect students from <u>getting</u> into unsustainable debt.. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	The roof of the house collapsed <u>due to</u> heavy snowfall; <u>lucky</u> no one <u>was</u> (A) (B) (C) at home when the incident <u>occurred</u>. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	I hope <u>to boldly</u> <u>go where</u> there is danger, <u>so</u> I can protect those around (A) (B) (C) me who are not as <u>brave</u> as I am. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	The <u>little</u> boy <u>held</u> his father's hand <u>hardly</u>; he didn't want <u>to lose</u> him (A) (B) (C) (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	Seldom <u>the barriers</u> between the races seem <u>less</u> <u>in evidence</u> than on this (A) (B) (C) <u>language leading</u> team. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	Henry thought that <u>annulling</u> his <u>marriage to</u> Catherine to marry Anne (A) (B) was <u>the most</u> perfect <u>move</u> on his part. (C) (D)	Ⓐ Ⓑ Ⓒ Ⓓ

DIRECTIONS:

In each question in the following, four alternative sentences are given. Choose the **CORRECT** one and fill the circle corresponding to that letter in the answer sheet.

Q.8	A) Ali's car wasn't so comfortable that Amir's, so we were too exhausted by the time we reached home. B) Ali's car wasn't such comfortable Amir's's, so we were too exhausted by the time we reached home. C) Ali's car wasn't comfortable enough Amir's, so we were too exhausted by the time we reached home. D) Ali's car wasn't so comfortable as Amir's, so we were too exhausted by the time we reached home.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.9	A) After a relaxing soothing massage, I wanted nothing more than to go home and sleep for the rest of the afternoon. B) After a relaxing, soothing massage, I wanted nothing more than to go home and sleep for the rest of the afternoon C) After relaxing soothing, massage, I wanted nothing more than to go home and sleep for the rest of the afternoon D) After a relaxing soothing but massage, I wanted nothing more than to go home and sleep for the rest of the afternoon	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.10	A) Heading to the concert, the icy roads made the street dangerous and slick. B) While Heading to the concert, the icy roads made the street dangerous and slick. C) While we headed to the concert, the icy roads made the street dangerous and slick. D) To head to the concert, the icy roads made the street dangerous and slick.	(A) (B) (C) (D)
Q.11	A) Human beings are taller and stronger than 200 years ago; since 1800, the average adult height has increase by 18 inches. B) Human beings are taller and stronger than they were 200 years ago; since 1800, the average adult height has increased by 18 inches. C) Humans, being taller and stronger than 200 years ago; since 1800, the average adult height has increased by 18 inches. D) Human being's are taller and stronger than 200 years ago; since 1800, the average adult height has increased by 18 inches.	(A) (B) (C) (D)
Q.12	A) More of the funs and excitement comes from use of your senses. B) More of the funs and excitement come from use of your senses. C) Many of the funs and excitement comes from use of your senses. D) Much of the fun and excitement comes from use of your senses.	(A) (B) (C) (D)
Q.13	A) After signing for many music shows, his first music album was released. B) After he sang for many music shows, his first music album was released. C) After he had sung for many music shows, his first music album was released. D) Though he sang for many shows, his first music album was released.	(A) (B) (C) (D)
Q.14	A) Bothered by the loud music next door, the work could not be done by Jill. B) Bothered by the loud music next door, Jills work could not be done. C) *Because Jill bothered the loud music next door*, Jill's work could not be done. D) *Bothered by the loud music next door, Jill could not do her work.*	(A) (B) (C) (D)
Q.15	A) The situation in Guyana is more serious than El Salvador. B) The situation in Guyana is the most serious of El Salvador C) The situation in Guyana is more serious than that of El Salvador D) The situation in Guyana is more serious than the situation in El Salvador.	(A) (B) (C) (D)

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KIPS Vocabulary UNIT – 5

Topic – 11

Vocabulary 401-500
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**INTERPOSED**		A B C D
	A) Intercede	C) Proceed	
	B) precede	D) supersede	
Q.2	**INTRANSIGENT**		A B C D
	A) Uncompromising	C) Unthinkable	
	B) Uncontroversial	D) Undulant	
Q.3	**ITINERANT**		A B C D
	A) Rejoinder	C) Buster	
	B) Imposter	D) Tramp	
Q.4	**JARGON**		A B C D
	A) Common language	C) Small talk	
	B) Special language	D) Formal talk	
Q.5	**JIG**		A B C D
	A) Denounce	C) Bounce	
	B) Pounce	D) Renounce	
Q.6	**JUNTA**		A B C D
	A) Foundation	C) Manifesto	
	B) League	D) Masses	
Q.7	**KISMET**		A B C D
	A) Determination	C) Aspiration	
	B) Destination	D) Destiny	
Q.8	**LAMPOON**		A B C D
	A) Mock	C) Intoxicate	
	B) Bolt	D) Infuriate	
Q.9	**LAUD**		A B C D
	A) Recommend	C) Commend	
	B) Apprehend	D) Command	
Q.10	**LIGAMENT**		A B C D
	A) Stump	C) Root	
	B) Rejoinder	D) Connector	
Q.11	**LISSOME**		A B C D
	A) Arrogant	C) Elegant	
	B) Eminent	D) Eloquent	
Q.12	**MANICURED**		A B C D
	A) Versatile	C) Polytechnic	
	B) Recovered	D) Orderly	

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Q.13	**MECHANISM** A) Process C) Intension B) Planning D) Detention	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**MENIAL** A) Vain C) Humble B) Humiliating D) Pretentious	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**MILD** A) Clement C) Stern B) Rigid D) Hysterical	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Or, you can seal the _____ with duct tape placed lengthwise all along the seams and end joints.** A) Junta C) Joint B) Juncture D) Jocular	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Clamping pieces against grinding and polishing _____ wheels helped to achieve virtually perfect 'mirror' finishes.** A) Lateral C) Ligament B) Lineage D) Lapidary	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**We forget that many great works of art were not created for the _____ we call museums.** A) Matriculation C) Malevolence B) Mausoleums D) Meritorious	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Although it prefers no frost, it will tolerate a _____ amount of it.** A) Moderate C) Maverick B) Magnanimous D) Manicured	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**I look at everyone and everything around me in the sea of _____ colors vibrating in the room.** A) Motley C) Mild B) Menial D) Mean	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS GRAMMAR UNIT – 11

Topic – 12

Preposition
MCQs: 15

LEARNING OUTCOMES

1. Omission of preposition ☐
2. Commission of prepositions ☐
3. Overlapping of prepositions ☐
4. Difference in prepositions ☐
5. Words followed by prepositions ☐
6. Prepositions of location ☐
7. Prepositions of time ☐
8. Prepositions of Agent ☐

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Q.1	I apologized for my transgression when I argued with you after I was A) B) unable to abide to your rules prohibiting me from smoking. C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	Often, young children feel pressure to conform with the values and ideals A) of their peer group, even though in their hearts they know the behavior is B) C) equivalent to doing less than their best. D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	Twins can either be identical to each other, but if they are fraternal twins, A) B) even if they look similar with each other, others will be capable of telling C) D) them apart easily.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	I prefer Marlene on any other hairdresser I have visited in the past A) B) because she has such a good understanding of her clients' needs C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	The ship wrecked in a desert island, coconuts and other fruit formed the A) B) C) basis of the sailor's diet. D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	She ran along the corridor and at the stairs to the second floor. A) B) C) D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	To get to the Marketing department, you have to go between those stairs A) B) C) and then along the corridor to the end. D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.8	A) Of course, socialism was not congruent to communism but not was the former divorced from the latter that it could avoid suffering in some significant way from its debacle. B) Of course, socialism was not congruent with communism but not was the former divorced from the latter that it could avoid suffering in some significant way from its debacle. C) Of course, socialism was not congruent of communism but not was the former divorced from the latter that it could avoid suffering in some significant way from its debacle. D) Of course, socialism was not congruent about communism but not was the former divorced from the latter that it could avoid suffering in some significant way from its debacle.	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.9	A) I will not object to his delivering the lecture as long as he is told not to make personal attacks of his critics. B) I will not object to his delivering the lecture as long as he is told not to make personal attacks to his critics. C) I will not object to his delivering the lecture as long as he is told not to make personal attacks his critics. D) I will not object to his delivering the lecture as long as he is told not to make personal attacks on his critics.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	A) The rosebay, which decorates so many English gardens, is not native in Europe. B) The rosebay, which decorates so many English gardens, is not native of Europe. C) The rosebay, which decorates so many English gardens, is not native to Europe. D) The rosebay, which decorates so many English gardens, is not native of Europe.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	A) She must also know that the woman's Reservation Bill has a very little chance of being passed because the nature of the opposition to it from all quarters. B) She must also know that the woman's Reservation Bill has a very little chance of being passing because the nature of the opposition to it from all quarters. C) She must also know that the woman's Reservation Bill has a very little chance of being passed because of the nature of the opposition to it from all quarters. D) She must also know that the woman's Reservation Bill has very little chance of being passed because of the nature of the opposition to it from all quarters.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	A) The couple is having trouble choosing among Hawaii and Florida for vacation. B) The couple is having trouble choosing between Hawaii and Florida for vacation. C) The couple is having trouble choosing between Hawaii or Florida for vacation. D) The couple is having trouble choosing between Hawaii and Florida for vacations.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	A) I understand it is always very hard to wake up in the morning, especially on Monday. B) I understand it is always very hard to wake upon the morning, especially on Monday. C) I understand it is always very hard to wake up in the morning, especially in Monday. D) I understand it is always very hard to wake up at the morning, specially on Monday.	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.14	A) She continued her singing, dancing and acting in plays since her school and college years but greatly get more and more involved in social work. B) She continued her singing, dancing and acting in plays since her school and college year but greatly got more and more involved in social work. C) She continued her singing, dancing and acting in plays throughout her school and college years but greatly got more and more involved in social work. D) She continued her singing, dancing and acting in plays through her school and college years but greatly get more and more involved in social work.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	A) America will continue extending political, moral and diplomatic support to the struggling people of Iraq for their right for self-determination. B) America will continue extending political, moral and diplomatic support to the struggling people of Iraq to their right for self-determination. C) America will continue extending political, moral and diplomatic support of the struggling people of Iraq to their right for self-determination. America will continue extending political, moral and diplomatic support to the struggling people of Iraq for their right to self-determination.	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS VOCABULARY UNIT – 6

Topic – 13

Vocabulary 501-600
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**NAUSEA** A) Disgust B) Rust	C) Crust D) Disguise	(A) (B) (C) (D)
Q.2	**NOURISH** A) Enrich B) Enfeeble	C) Improvise D) Ensnare	(A) (B) (C) (D)
Q.3	**OBLITERATE** A) Overlook B) Instruct	C) Eliminate D) Initiate	(A) (B) (C) (D)
Q.4	**OBTUSE** A) Dull B) Doubtful w	C) Pungent D) Penetrating	(A) (B) (C) (D)
Q.5	**OPPOSITION** A) Defense B) Defiance	C) Docility D) Dogma	(A) (B) (C) (D)
Q.6	**ORB** A) Twig B) Rectangular	C) Ring D) Conical	(A) (B) (C) (D)
Q.7	**PAD** A) Protection B) Penetration	C) Equipment D) Baggage	(A) (B) (C) (D)
Q.8	**PAMPAS** A) Grassland B) Fenland	C) Lowland D) Highland	(A) (B) (C) (D)
Q.9	**PARADOX** A) Aftermath B) Amalgam	C) Ordeal D) Enigma	(A) (B) (C) (D)
Q.10	**PARAMEDIC** A) Medical student B) Medical doctor	C) Medical examiner D)Medical technician	(A) (B) (C) (D)
Q.11	**PARLOUS** A) Frightful B) Guileful	C) Diurnal D) Nocturnal	(A) (B) (C) (D)
Q.12	**PASSIVE** A) Concealing B) Yielding	C) Perceiving D) Contriving	(A) (B) (C) (D)

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Q.13	**PENDING** A) Undeveloped B) Unresolved C) Unrestricted D) Unprovoked	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**PERIMETER** A) Border B) Boarder C) Boulder D) Hoarder	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**PERPETUATE** A) Convene B) Converse C) Conserve D) Contrive	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Today we do nothing but disseminate corruption in the world; we _____ and destroy the world.** A) Obligatory B) Obsequious C) Obliterate D) Obtuse	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Experience shows that it is important to include all bank loans, _____ and credit cards into any reduced payment scheme.** A) Overlie B) Orientate C) Orthodox D) Overdrafts	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Since I've started the whole _____, I may as well carry it forward.** A) Palazzo B) Palaver C) Palpation D) Palatable	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**'The world today is caught in a _____ of violent upheaval.** A) Paroxysm B) Peerless C) Parlous D) Pedestrian	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**This nerve is considered by some authors as the most variable nerve of the lumbar _____.** A) Plexus B) Posture C) Posterior D) Pilaster	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS GRAMMAR UNIT – 5&6

Topic – 14

Noun and Article
MCQs: 15

LEARNING OUTCOMES

NOUN

1. Noun and qualifying words ☐
2. Noun and its plural ☐
3. Noun and Possessive 's' (genitive) ☐
4. Noun and Collective Noun ☐
5. Noun and Adjective with article 'The' ☐
6. Noun versus Verb ☐

ARTICLES

7. General use of *a/an* ☐
8. General use of *the* ☐
9. Article *the* with adjectives ☐
10. Article *the* with nouns ☐
11. Article *the* and direction ☐
12. Article *the* and names ☐
13. Limitations ☐

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SPOT THE ERROR

In the first type of sentences, some segments of each sentence are underlined. Your task is to identify that underlined segment of the sentence, which contains the mistake that needs to be corrected.

Q.1	Although I hoped my departure (A) wouldn't affect (B) your behavior, the negative affect (C) was clear. (D)	(A) (B) (C) (D)
Q.2	There is (A) a large amount (B) of sugars (C) in the brownies, so they (D) should not be eaten frequently.	(A) (B) (C) (D)
Q.3	Hundred (A) of lives were (B) lost in this catastrophe and millions upon (C) of dollars worth of damage was (D) done.	(A) (B) (C) (D)
Q.4	I packed (A) my suitcase, bag, and briefcase for (B) my trip. I took (C) all my luggages. (D)	(A) (B) (C) (D)
Q.5	Man's (A) three pounds (B) brain is the most (C) complex. (D)	(A) (B) (C) (D)
Q.6	When (A) I entered (B) the room, I saw (C) two young beautiful females. (D)	(A) (B) (C) (D)
Q.7	We decided to buy (A) three litre (B) of gasoline (C) before driving to the party. (D)	(A) (B) (C) (D)

DIRECTIONS: In each question in the following, four alternative sentences are given. Choose the **CORRECT** one and fill the circle corresponding to that letter in the answer sheet.

Q.8	A) I had a fish and a chips for dinner. B) I had the fish and chips for dinner. C) I had the fish and the chips for dinner. D) I had fish and chips for dinner.	(A) (B) (C) (D)
Q.9	A) I'm on diet. No sugar for me! B) I'm on the diet. No the sugar for me! C) I'm on a diet. No sugar for me! D) I'm on the diet. No a sugar for me!	(A) (B) (C) (D)
Q.10	A) I'm staying at the hotel on the Hudson river. B) I'm staying at a hotel on the Hudson river. C) I'm staying at a hotel on a Hudson river. D) I'm staying at a hotel on Hudson river.	(A) (B) (C) (D)

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Q.11	A) A friend of mine is coming to visit next week. B) The friend of mine is coming to visit next week. C) Friend of mine is coming to visit next week. D) An friend of mine is coming to visit next week.	(A) (B) (C) (D)
Q.12	A) Jack Anderson was caught holding a match during fire. B) Jack Anderson was caught holding a match during the fire. C) Jack Anderson was caught holding the match during a fire. D) Jack Anderson was caught holding match during fire.	(A) (B) (C) (D)
Q.13	A) She replied in surprise that a question was much too difficult. B) She replied in a surprise that a question was much too difficult. C) She replied in surprise that the question was much too difficult. D) She replied in surprise that question was much too difficult.	(A) (B) (C) (D)
Q.14	A) I'm afraid I can't remember the exact date of a show. B) I'm afraid I can't remember the exact date of show. C) I'm afraid I can't remember exact date of show. D) I'm afraid I can't remember the exact date of the show.	(A) (B) (C) (D)
Q.15	A) I'm afraid the answer is 'no'. Come back when you can make a new proposal. B) I'm afraid answer is 'no'. Come back when you can make the new proposal. C) I'm afraid the answer is 'no'. Come back when you can make the new proposal. D) I'm afraid the answer is 'no'. Come back when you can make new proposal.	(A) (B) (C) (D)

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KIPS VOCABULARY UNIT – 7

Topic – 15

Vocabulary 601-700
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**PREVAIL**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Oversee	C) Overhear	
	B) Overlook	D) Overcome	
Q.2	**PRIVATION**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Secrecy	C) Hardship	
	B) Kinship	D) Seclusion	
Q.3	**PROLIFERATE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Accelerate	C) Spread	
	B) Decelerate	D) Gather	
Q.4	**PROPONENT**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Pilgrim	C) Patron	
	B) Pattern	D) Patriot	
Q.5	**PROVOCATIVE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Boastful	C) Vexing	
	B) Taxing	D) Lusty	
Q.6	**PURIFIED**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Disinfected	C) Mangled	
	B) Contaminated	D) Dangled	
Q.7	**QUAGMIRE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Fenland	C) Inland	
	B) Woodland	D) Wasteland	
Q.8	**QUEUE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Bile	C) Pile	
	B) File	D) Guile	
Q.9	**RAPACIOUS**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Courteous	C) Covetous	
	B) Curious	D) Coveted	
Q.10	**REACTIONARY**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Crucial	C) Conventional	
	B) Controversial	D) Contented	
Q.11	**RECLUSIVE**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Outright	C) Down to earth	
	B) Withdrawn	D) Outdated	
Q.12	**REGIME**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Alteration	C) Bifurcation	
	B) Admittance	D) Administration	
Q.13	**RELATIONSHIP**		Ⓐ Ⓑ Ⓒ Ⓓ
	A) Nexus	C) Hearth	
	B) Vicinity	D) Channel	

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Q.14	**RESTITUTION** A) Restoration B) Litigation C) Aspiration D) Inspiration	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**RIFF** A) Mimicry B) Imagery C) Melody D) Malady	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**In recent years, the gallery has made a concerted effort to _____ art works by contemporary South African artists.** A) Prune B) Purchase C) Procure D) Prevail	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Of course, politics could and should be made more accessible, interesting, _____.** A) Provident B) Reclusive C) Querulous D) Provocative	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**The more extensive the member roster, the harder it might be to achieve a _____ consistently when meetings are called.** A) Cue B) Quorum C) Regime D) Relief	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Enormous in magnitude, audacious in its execution and _____ of the most serious dishonesty.** A) Redolent B) Regnant C) Reversible D) Remedial	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**All submitted data were carefully _____ and checked for completeness.** A) Simplified B) Stabilized C) Scrutinized D) Stilted	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS GRAMMAR UNIT – 8

Topic – 16

Pronoun
MCQs: 15

LEARNING OUTCOMES

1. CASES OF PRONOUNS
2. RELATIVE PRONOUNS
3. ORDER OF PRONOUNS
4. ORDER OF NOUN AND PRONOUN
5. REFLEXIVE PRONOUN
6. RECIPROCAL PRONOUN
7. NO/VAGUE PRONOUN

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SPOT THE ERROR

In the first type of sentences, some segments of each sentence are underlined. Your task is to identify that underlined segment of the sentence, which contains the mistake that needs to be corrected.

Q.1	While comparing (A) my mother and father, I (B) don't know which (C) is the stricter. (D)	Ⓐ Ⓑ Ⓒ Ⓓ
Q.2	My mom asked me (A) who (B) else I was visiting when I told her whom (C) I was going to visit and I said "I will visit whomever (D) I want."	Ⓐ Ⓑ Ⓒ Ⓓ
Q.3	When you (A) asked who (B) was invited, I told you "I will invite whoever (C) you want me to, but I don't know whose (D) party it is."	Ⓐ Ⓑ Ⓒ Ⓓ
Q.4	The mothers (A) should realize (B) that once you (C) get a baby, they (D) will have to take care of it twenty four hours.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.5	I (A) can't tell you (B) what to do, and if you (C) don't want to learn grammar for myself, I (D) can't make you.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.6	Everyone knows that they (A) will not win the (B) race without dedication, so it is (C) imperative that each (D) runner run for a mile a day.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.7	As per the bank regulations, either (A) one of (B) the account holders, my mother, my father or I (C) can withdraw money from (D) the account.	Ⓐ Ⓑ Ⓒ Ⓓ

DIRECTIONS:

In each question in the following, four alternative sentences are given. Choose the **CORRECT** one and fill the circle corresponding to that letter in the answer sheet.

Q.8	A) Each of the participants were required to have their height and weight recorded. B) Each of the participants was required to have there height and weight recorded. C) Each of the participants was required to have their height and weight recorded. D) Each of the participants was required to have his or her height and weight recorded.	Ⓐ Ⓑ Ⓒ Ⓓ

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Q.9	A) I, you and he are fighting for a more worthy cause. B) You, he and I are fighting for a more worthy cause. C) He, I and you are fighting for a more worthy cause. D) You, I and he are fighting for a more worthy cause.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.10	A) It is very important for children to learn mathematics, so I hope that they teach them the basics. B) It is very important for children to learn mathematics, so I hope teachers teach them the basics. C) It is very important for children to learn mathematics, so I hope that they learn the basics from them. D) It is very important for children to learn mathematics, so I hope the basics are taught them by them.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.11	A) Karen was alarmed when Susan took the test, she had not been planning that. B) Karen was alarmed when Susan took the test, because she had not been planning that. C) Karen was alarmed when Susan took the test, because Susan had not been planning to take it. D) Karen was alarmed when Susan took the test, since the test was unplanned.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.12	A) Joseph Smith's biography was written by Mike Jones two weeks after his death. B) Joseph Smith's biography was written by Mike Jones two weeks after he died. C) Joseph Smith's biography was written by Mike Jones two weeks later than his death. D) Joseph Smith's biography was written by Mike Jones two weeks after Smith's death.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.13	A) Susan and Mike visited Europe last year, and she took lots of pictures. B) Susan and Mike visited Europe last year, and lots of pictures were taken by her. C) Susan and Mike visited Europe last year, and pictures, lots of them, were taken. D) Susan and Mike visited Europe last year, and lots of pictures were taken by Susan.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	A) The cat scratched my son, so I sent him to the corner. B) The cat scratched my son, so he was sent to the corner. C) The cat scratched my son, so I sent the cat to the corner. D) The cat scratched my son, so to the corner went the cat.	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	A) The firm buys frozen seafood in bulk, packs it into smaller pouches and then they sell them to the local grocery stores. B) The firm buys frozen seafood in bulk, packs it into smaller pouches and then it sells them to the local grocery stores. C) The firm buys frozen seafood in bulk, packs it into smaller pouches and then sells them to the local grocery stores. D) The firm buys frozen seafood in bulk, packs it into smaller pouches and then they sell the pouches to the local grocery stores.	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS VOCABULARY UNIT – 8

Topic – 17

Vocabulary 701-800
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms.	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	**SILHOUETTE**		A B C D
	A) Nightmare	C) Figure	
	B) Figurative	D) Night bird	
Q.2	**SINGE**		A B C D
	A) Fume	C) Dip	
	B) Moist	D) Burn	
Q.3	**SKEPTICAL**		A B C D
	A) Intangible	C) Incredulous	
	B) Inevitable	D) Invariable	
Q.4	**SNIDE**		A B C D
	A) Contemporary	C) Contrary	
	B) Contemptuous	D) Contriving	
Q.5	**SOLVENT**		A B C D
	A) Indebted	C) Elastic	
	B) Judgmental	D) Secure	
Q.6	**STANCH**		A B C D
	A) Bloc	C) Bleak	
	B) Block	D) Blacken	
Q.7	**STILTED**		A B C D
	A) Spirited	C) Strenuous	
	B) Stifling	D) Stiff	
Q.8	**STOICISM**		A B C D
	A) Endowment	C) Enhancement	
	B) Endurance	D) Intolerance	
Q.9	**SUPERFICIAL**		A B C D
	A) Gigantic	C) Casual	
	B) Superb	D) Causal	
Q.10	**SURFACE**		A B C D
	A) Veneer	C) Severe	
	B) Core	D) Soar	
Q.11	**SWIVEL**		A B C D
	A) Slide	C) Swing	
	B) Ripple	D) Glide	
Q.12	**SYNTHESIS**		A B C D
	A) Amalgam	C) Conclusion	
	B) Consequence	D) Ambiguity	

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Q.13	**THERAPEUTIC** A) Analytic B) Recreatinary	C) Residual D) Remedial	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**TRANSLUCENT** A) Hazy B) Crystal	C) Opaque D) Rosy	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**TRIFLE** A) Flirt B) Curt	C) Blurt D) Bulge	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**Great minds such as ours must be serene and _____ in order to remain above the fray.** A) Torpid B) Thorax	C) Tranquil D) Taxidermy	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**His legacy is to remind us to be _____ about science and suspicious of facts.** A) Superficial B) Therapeutic	C) Terminal D) Skeptical	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**Future work may identify explicit factors mediating the links between _____ and psychological symptoms.** A) Structural B) Somatic	C) Tactile D) Solvent	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**He almost lost not only his British optimism but his Germanic _____.** A) Stoicism B) Stratagem	C) Supposition D) Syndrome	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**All the stories are simply constructed, no _____ words, no extra images to clutter the feeling.** A) Superfluous B) Substituent	C) Supination D) Synergist	Ⓐ Ⓑ Ⓒ Ⓓ

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KIPS VOCABULARY UNIT – 8

Topic – 18

Vocabulary 801-843
MCQs: 20

LEARNING OUTCOMES

1.	Were the definition sentences read by the teacher?	☐
2.	Was any grammatical rule explained while reading definition sentence?	☐
3.	Were the example sentences read by the trainer?	☐
4.	Were the students told about red, blue, and black colour synonyms?	☐
5.	While teaching vocabulary exercise 1.1, did the teacher read all the four options and explain the meaning.	☐
6.	Did the trainer point out the key word and clues while teaching exercise 1.2	☐
7.	Were all the options read and explained while teaching the exercise 1.3	☐
8.	Were all the rules in all the options of exercise 3.3 explained?	☐

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KIPS SELF ASSESSMENT TEST

Q.1	TUSSLE		Ⓐ Ⓑ ● Ⓓ
	A) Convulsion	C) Contention	
	B) Convention	D) Conviction	
Q.2 C	UNDULATE		Ⓐ ● Ⓒ Ⓓ
	A) Sweep	C) Flow	
	B) Drip	D) Drift	
Q.3	VALIDITY		● Ⓑ Ⓒ Ⓓ
	A) Credibility	C) Hostility	
	B) Triviality	D) Rigidity	
Q.4	VASCULAR		Ⓐ ● Ⓒ Ⓓ
	A) Ribs	C) Neurons	
	B) Vessels	D) Liquids	
Q.5	VEGETATE		Ⓐ Ⓑ ● Ⓓ
	A) Idolize	C) Idle	
	B) Wade	D) Toddle	
Q.6 B	VENEER		● Ⓑ Ⓒ Ⓓ
	A) Liar	C) Lone	
	B) Lair	D) Loin	
Q.7	VERTEX		Ⓐ Ⓑ ● Ⓓ
	A) Pedestal	C) Peak	
	B) Poke	D) Spiral	
Q.8	VIRAGO		Ⓐ ● Ⓒ Ⓓ
	A) Rag	C) Gag	
	B) Hag	D) Lag	
Q.9	VISTA		Ⓐ Ⓑ Ⓒ ●
	A) Spectacular	C) Speck	
	B) Spectator	D) Spectacle	
Q.10	VORACIOUS		Ⓐ ● Ⓒ Ⓓ
	A) Perceptive	C) Drab	
	B) Keen	D) Impulsive	
Q.11	XERIC		Ⓐ Ⓑ ● Ⓓ
	A) Tilted	C) Withered	
	B) Soaked	D) Tattered	
Q.12	VENOMOUS		Ⓐ Ⓑ Ⓒ ●
	A) Distorted	C) Intoxicant	
	B) Taxing	D) Toxic	

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Q.13	**VALE** A) Peak B) Meadow	C) Plateau D) Valley	Ⓐ Ⓑ Ⓒ Ⓓ
Q.14	**VISUALIZE** A) Envision B) Conjoin	C) Enliven D) Sojourn	Ⓐ Ⓑ Ⓒ Ⓓ
Q.15	**WAN** A) Fanciful B) Futile	C) Feeble D) Funereal	Ⓐ Ⓑ Ⓒ Ⓓ
Q.16	**As this material approaches the black hole, it swirls in a _____, like water swirling down a drain.** A) Tussle B) Vascular	C) Vale D) Vortex	Ⓐ Ⓑ Ⓒ Ⓓ
Q.17	**Democracy does not mean_____ majority rule, but recognition and cultivation of minorities.** A) Undulate B) Vegetate	C) Vanquish D) Unmitigated	Ⓐ Ⓑ Ⓒ Ⓓ
Q.18	**It was already alleged that I was pursuing a against him.** A) Veneer B) Vendetta	C) Verve D) Virago	Ⓐ Ⓑ Ⓒ Ⓓ
Q.19	**Fictional stories and dreams have precisely the same effect;_____ does not seem to be a central component.** A) Veracity B) Venerable	C) Venomous D) Venality	Ⓐ Ⓑ Ⓒ Ⓓ
Q.20	**The term vertical refers to a number of successive _____ of the same wine.** A) Vintages B) Voracious	C) Virulent D) Visualize	Ⓐ Ⓑ Ⓒ Ⓓ

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ANSWER KEY

BIOLOGY

KIPS UNIT-1

1	A	6	A	11	A	16	C	21	A	26	B
2	A	7	C	12	A	17	D	22	C	27	B
3	D	8	C	13	D	18	B	23	C	28	C
4	D	9	A	14	C	19	B	24	C	29	C
5	C	10	D	15	A	20	D	25	C	30	A

KIPS UNIT-2

1	B	6	D	11	A	16	C	21	B	26	D
2	B	7	C	12	B	17	B	22	B	27	B
3	D	8	C	13	C	18	C	23	A	28	C
4	D	9	D	14	C	19	B	24	C	29	B
5	B	10	B	15	D	20	D	25	B	30	D

KIPS UNIT-3

1	B	6	B	11	D	16	B	21	C	26	A
2	B	7	C	12	D	17	C	22	B	27	B
3	A	8	A	13	A	18	B	23	D	28	A
4	B	9	B	14	C	19	D	24	B	29	A
5	A	10	C	15	C	20	B	25	D	30	A

KIPS UNIT-4

1	B	6	B	11	C	16	D	21	C	26	B
2	A	7	A	12	B	17	C	22	A	27	B
3	B	8	D	13	A	18	B	23	D	28	B
4	A	9	D	14	B	19	B	24	A	29	B
5	B	10	A	15	D	20	C	25	B	30	C

KIPS UNIT-5

1	A	6	D	11	A	16	C	21	C	26	D
2	C	7	B	12	C	17	B	22	B	27	D
3	B	8	B	13	B	18	A	23	B	28	B
4	A	9	C	14	C	19	D	24	A	29	A
5	A	10	D	15	C	20	D	25	A	30	A

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KIPS UNIT-6

1	A	6	C	11	B	16	C	21	B	26	D
2	B	7	A	12	A	17	B	22	D	27	B
3	A	8	B	13	D	18	C	23	C	28	C
4	C	9	A	14	B	19	C	24	B	29	D
5	D	10	C	15	B	20	D	25	C	30	B

KIPS UNIT-7

1	A	6	D	11	C	16	C	21	A	26	C
2	C	7	B	12	C	17	A	22	B	27	D
3	C	8	B	13	C	18	D	23	B	28	A
4	B	9	A	14	D	19	C	24	B	29	C
5	B	10	B	15	B	20	D	25	A	30	C

KIPS UNIT-8

1	A	6	B	11	A	16	B	21	A	26	C
2	B	7	A	12	C	17	D	22	C	27	C
3	A	8	A	13	A	18	B	23	A	28	A
4	D	9	C	14	D	19	A	24	D	29	B
5	D	10	A	15	D	20	A	25	D	30	C

KIPS UNIT-9

1	A	6	A	11	D	16	B	21	C	26	C
2	D	7	D	12	C	17	A	22	A	27	D
3	C	8	B	13	B	18	C	23	C	28	B
4	A	9	A	14	D	19	A	24	A	29	A
5	D	10	D	15	A	20	C	25	B	30	B

KIPS UNIT-10

1	D	6	D	11	C	16	B	21	D	26	C
2	A	7	B	12	B	17	B	22	B	27	B
3	B	8	B	13	A	18	B	23	B	28	B
4	C	9	D	14	C	19	A	24	A	29	C
5	B	10	A	15	C	20	C	25	B	30	B

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CHEMISTRY

KIPS UNIT-1

1	A	11	C	21	B
2	C	12	C	22	C
3	C	13	B	23	A
4	A	14	A	24	C
5	B	15	A	25	C
6	B	16	D	26	A
7	D	17	A	27	B
8	B	18	D	28	A
9	A	19	C	29	A
10	A	20	B	30	A

KIPS UNIT-2

1	D	11	C	21	A
2	C	12	B	22	A
3	A	13	C	23	D
4	C	14	B	24	B
5	D	15	B	25	B
6	D	16	B	26	D
7	C	17	A	27	B
8	A	18	C	28	B
9	D	19	A	29	B
10	C	20	B	30	B

KIPS UNIT-3

1	C	11	B	21	D
2	D	12	B	22	D
3	C	13	A	23	D
4	D	14	B	24	B
5	D	15	C	25	D
6	C	16	C	26	B
7	D	17	C	27	B
8	D	18	A	28	B
9	A	19	A	29	D
10	B	20	D	30	A

KIPS UNIT-4

1	C	11	A	21	C
2	B	12	C	22	B
3	D	13	C	23	A
4	D	14	D	24	D
5	B	15	C	25	A
6	C	16	B	26	C
7	B	17	B	27	B
8	B	18	D	28	B
9	B	19	B	29	C
10	C	20	C	30	B

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KIPS UNIT-5

1	B	11	D	21	D
2	B	12	A	22	A
3	C	13	A	23	B
4	A	14	D	24	B
5	A	15	C	25	C
6	D	16	C	26	D
7	A	17	A	27	C
8	A	18	C	28	B
9	A	19	A	29	C
10	C	20	B	30	B

KIPS UNIT-6

1	C	11	B	21	A
2	C	12	B	22	C
3	A	13	D	23	A
4	A	14	D	24	C
5	D	15	D	25	C
6	C	16	A	26	A
7	B	17	B	27	C
8	A	18	A	28	D
9	C	19	D	29	B
10	D	20	C	30	B

KIPS UNIT-7

1	C	11	C	21	A
2	B	12	A	22	D
3	A	13	C	23	B
4	D	14	D	24	C
5	B	15	B	25	A
6	D	16	A	26	D
7	D	17	B	27	B
8	D	18	A	28	D
9	B	19	B	29	A
10	C	20	B	30	D

KIPS UNIT-8

1	C	11	A	21	B
2	C	12	D	22	B
3	D	13	D	23	A
4	C	14	A	24	D
5	A	15	D	25	C
6	C	16	C	26	D
7	D	17	D	27	D
8	B	18	A	28	A
9	A	19	D	29	D
10	C	20	A	30	C

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KIPS UNIT-9

1	A	11	A	21	B
2	D	12	B	22	D
3	C	13	D	23	A
4	B	14	A	24	D
5	B	15	A	25	A
6	C	16	D	26	D
7	C	17	A	27	B
8	A	18	B	28	D
9	A	19	C	29	B
10	B	20	B	30	B

KIPS UNIT-10

1	A	11	A	21	A
2	A	12	C	22	C
3	D	13	A	23	A
4	A	14	A	24	C
5	A	15	B	25	B
6	B	16	A	26	A
7	A	17	A	27	C
8	B	18	A	28	C
9	B	19	B	29	C
10	A	20	A	30	C

KIPS UNIT-11

1	D	11	D	21	B
2	C	12	B	22	B
3	A	13	C	23	A
4	D	14	C	24	C
5	C	15	A	25	C
6	A	16	A	26	A
7	B	17	B	27	A
8	A	18	C	28	A
9	A	19	C	29	C
10	B	20	C	30	C

KIPS UNIT-12

1	A	11	B	21	D
2	B	12	D	22	A
3	C	13	C	23	B
4	B	14	A	24	D
5	C	15	C	25	D
6	B	16	D	26	C
7	C	17	A	27	C
8	B	18	A	28	D
9	C	19	A	29	A
10	D	20	D	30	D

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PHYSICS

MEASUREMENT

1	A	11	C	21	B
2	B	12	A	22	B
3	C	13	D	23	D
4	D	14	C	24	A
5	B	15	B	25	B
6	C	16	A	26	C
7	C	17	A	27	B
8	B	18	A	28	A
9	C	19	C	29	B
10	B	20	D	30	A

MOTION AND FORCE

1	D	11	A	21	B
2	B	12	C	22	D
3	B	13	D	23	A
4	D	14	D	24	C
5	A	15	B	25	A
6	B	16	A	26	B
7	D	17	A	27	A
8	D	18	B	28	A
9	B	19	D	29	D
10	A	20	D	30	D

MOTION AND FORCE

1	C	11	C	21	B
2	B	12	A	22	C
3	A	13	B	23	C
4	D	14	B	24	D
5	B	15	C	25	C
6	A	16	C	26	B
7	A	17	C	27	D
8	D	18	A	28	A
9	B	19	D	29	B
10	D	20	D	30	A

OSCILLATIONS AND WAVES

1	A	11	A	21	C
2	D	12	A	22	D
3	A	13	C	23	B
4	C	14	D	24	A
5	C	15	A	25	D
6	C	16	A	26	D
7	B	17	B	27	B
8	D	18	D	28	B
9	D	19	C	29	C
10	C	20	C	30	B

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LIGHT

1	B	11	D	21	B
2	B	12	A	22	A
3	D	13	C	23	A
4	D	14	B	24	D
5	A	15	B	25	D
6	A	16	D	26	B
7	C	17	A	27	C
8	C	18	B	28	D
9	D	19	B	29	D
10	C	20	A	30	D

HEAT AND THERMODYNAMICS

1	B	11	C	21	B
2	A	12	D	22	D
3	A	13	A	23	B
4	A	14	A	24	D
5	B	15	A	25	D
6	C	16	A	26	D
7	A	17	B	27	A
8	B	18	C	28	C
9	B	19	D	29	A
10	A	20	D	30	D

ELECTROSTATICS

1	C	11	C	21	C
2	C	12	D	22	A
3	D	13	C	23	D
4	C	14	B	24	A
5	D	15	C	25	B
6	D	16	D	26	B
7	C	17	A	27	C
8	A	18	C	28	C
9	D	19	B	29	B
10	D	20	C	30	C

CURRENT ELECTRICITY

1	D	11	B	21	A
2	C	12	B	22	B
3	A	13	C	23	B
4	A	14	C	24	D
5	A	15	B	25	A
6	D	16	A	26	C
7	B	17	B	27	B
8	B	18	D	28	C
9	A	19	B	29	C
10	C	20	C	30	A

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ELECTROMAGNETISM AND ELECTROMAGNETIC INDUCTION

1	D	11	B	21	D
2	D	12	D	22	C
3	B	13	C	23	A
4	A	14	D	24	B
5	C	15	C	25	C
6	D	16	B	26	B
7	A	17	B	27	D
8	A	18	D	28	A
9	D	19	B	29	D
10	A	20	C	30	A

DEFORMATION OF SOLID AND ELECTRONICS

1	A	11	D	21	C
2	C	12	D	22	D
3	D	13	A	23	D
4	A	14	B	24	A
5	A	15	B	25	D
6	B	16	C	26	C
7	D	17	B	27	D
8	A	18	A	28	C
9	B	19	D	29	A
10	B	20	A	30	D

MODERN PHYSICS

1	A	11	C	21	B
2	A	12	A	22	B
3	C	13	D	23	D
4	A	14	A	24	B
5	A	15	C	25	A
6	B	16	C	26	B
7	C	17	A	27	B
8	D	18	D	28	C
9	C	19	D	29	D
10	C	20	D	30	B

NUCLEAR PHYSICS

1	C	11	D	21	D
2	C	12	A	22	C
3	D	13	C	23	C
4	C	14	A	24	C
5	D	15	C	25	D
6	C	16	B	26	C
7	D	17	D	27	A
8	C	18	A	28	A
9	A	19	A	29	D
10	A	20	D	30	C

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ENGLISH

TOPIC-1

1	D	4	B	7	C	10	D	13	B
2	D	5	A	8	D	11	A	14	C
3	D	6	D	9	C	12	D	15	A

TOPIC 2

1	D	5	A	9	B	13	A	17	D
2	C	6	C	10	A	14	C	18	D
3	B	7	A	11	B	15	D	19	D
4	D	8	A	12	A	16	C	20	B

TOPIC-3

1	C	5	A	9	B	13	C	17	D
2	B	6	C	10	A	14	B	18	B
3	B	7	D	11	C	15	C	19	A
4	A	8	A	12	C	16	C	20	A

TOPIC-4

1	C	4	C	7	D	10	B	13	A
2	A	5	D	8	C	11	D	14	B
3	D	6	C	9	A	12	B	15	D

TOPIC-5

1	A	5	D	9	C	13	C	17	D
2	B	6	C	10	D	14	C	18	B
3	D	7	A	11	A	15	A	19	A
4	A	8	C	12	D	16	C	20	A

TOPIC-6

1	C	4	A	7	B	10	D	13	B
2	C	5	B	8	B	11	B	14	A
3	C	6	D	9	D	12	D	15	A

TOPIC-7

1	B	5	A	9	A	13	D	17	D
2	C	6	B	10	D	14	B	18	B
3	D	7	A	11	C	15	A	19	A
4	C	8	C	12	A	16	C	20	A

TOPIC-8

1	C	4	C	7	B	10	C	13	A
2	D	5	C	8	A	11	D	14	C
3	B	6	A	9	C	12	B	15	B

TOPIC-9

1	D	5	D	9	C	13	A	17	D
2	D	6	A	10	C	14	B	18	B
3	B	7	B	11	D	15	A	19	A
4	C	8	B	12	B	16	C	20	A

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TOPIC-10

1	A	4	A	7	C	10	C	13	C
2	B	5	C	8	D	11	B	14	D
3	B	6	A	9	B	12	D	15	D

TOPIC-11

1	A	5	C	9	C	13	A	17	D
2	A	6	B	10	D	14	C	18	B
3	D	7	D	11	C	15	A	19	A
4	B	8	A	12	D	16	C	20	A

TOPIC-12

1	C	4	A	7	C	10	C	13	A
2	A	5	B	8	B	11	D	14	C
3	C	6	B	9	D	12	B	15	D

TOPIC-13

1	A	5	B	9	D	13	B	17	D
2	C	6	C	10	D	14	A	18	B
3	C	7	A	11	A	15	C	19	A
4	A	8	A	12	B	16	C	20	A

TOPIC-14

1	C	4	D	7	D	10	B	13	C
2	C	5	B	8	D	11	A	14	D
3	A	6	D	9	A	12	B	15	A

TOPIC-15

1	D	5	C	9	C	13	A	17	D
2	C	6	A	10	C	14	A	18	B
3	A	7	A	11	B	15	C	19	A
4	C	8	B	12	D	16	C	20	C

TOPIC-16

1	C	4	D	7	A	10	B	13	D
2	B	5	D	8	D	11	C	14	C
3	C	6	A	9	B	12	D	15	C

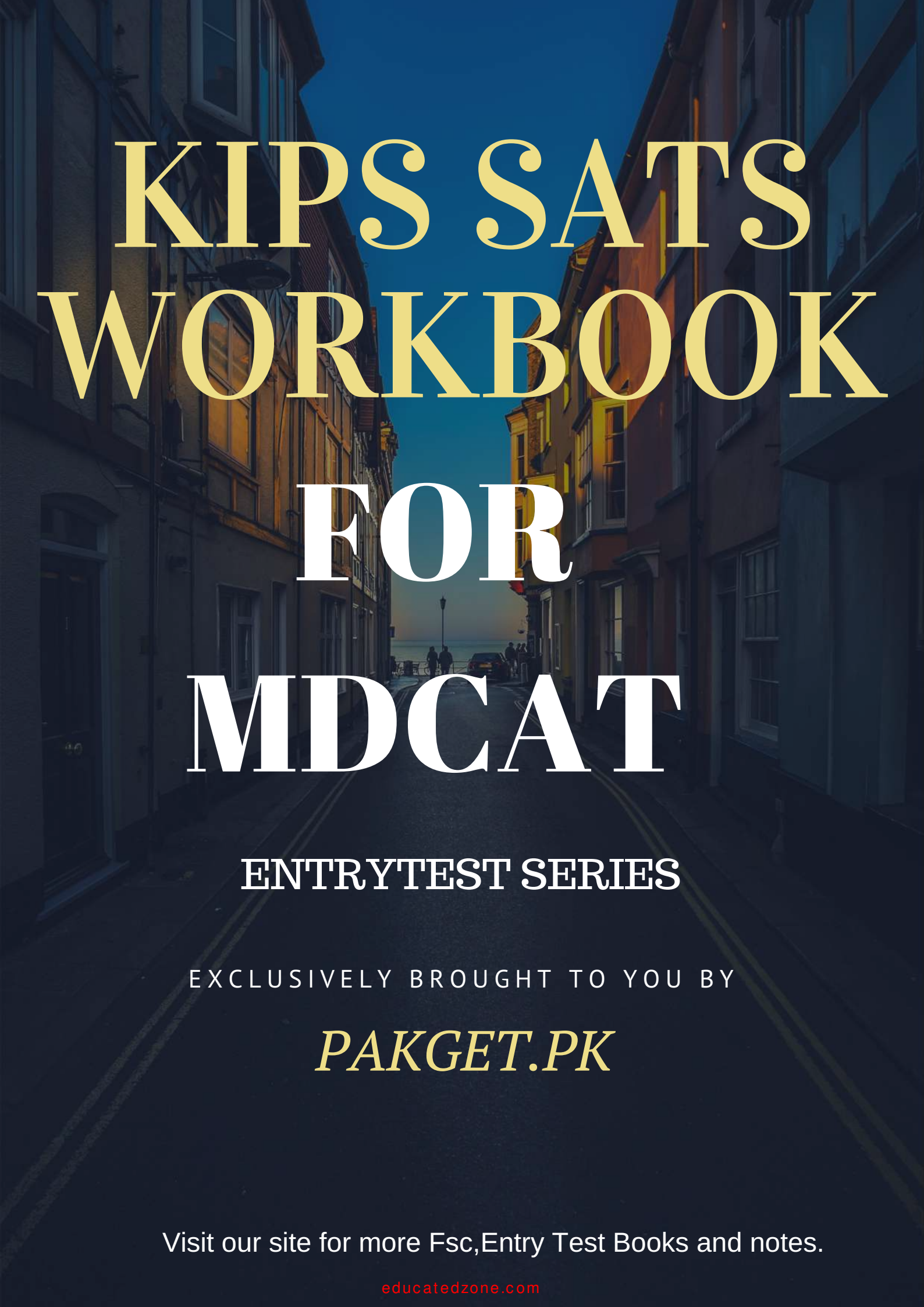
TOPIC-17

1	C	5	D	9	C	13	D	17	D
2	D	6	B	10	A	14	B	18	B
3	C	7	D	11	C	15	A	19	A
4	B	8	B	12	A	16	C	20	A

TOPIC-18

1	C	5	C	9	D	13	D	17	D
2	C	6	B	10	B	14	A	18	B
3	A	7	C	11	C	15	C	19	A
4	B	8	B	12	D	16	D	20	A

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