BIOLOGY

Worksheet-14

STEP

A PROJECT BY PUNJAB GROUP

Worksheet-14

Prokaryotes

Q.1 **It gives shape to the bacterial cell:**
A) Cell membrane C) Capsule
B) Cell wall D) Slime

Q.2 **Which one of the following is a specific structure of bacterial cell?**
A) Cell wall C) Ribosomes
B) Cell membrane D) Capsule

Q.3 **It is usually found in bacteria:**
A) Cell wall
B) Slime
C) Chromatin bodies
D) Mesosome

Q.4 **Bacteria range in size from about 0.1 to 600µm:**
A) On anterior side
B) Over a single dimension
C) In width
D) In thickness

Q.5 **Bacteria vary in:**
A) Size
B) Size as well as in shape
C) Shape
D) Cell type

Q.6 **The smallest bacteria are approximately the size of:**
A) Poxviruses C) Paramyxoviruses
B) Polio viruses D) Herpes viruses

Q.7 **Staphylococci and streptococci are _____ µm in diameter.**
A) 0.75 – 1.25µm C) 2.0 to 6.0
B) 1.1 – 1.5µm D) 0.1 to 600

Q.8 **On the basis of general shape bacteria are mainly classified into:**
A) Two categories C) Four categories
B) Three categories D) Five categories

Q.9 **On the basis of general shape bacteria are classified into:**
A) Cocci, spirochaete and staphylobacillus
B) Cocci, bacilli and coccobacillus
C) Cocci, Spirillum and Sarcina
D) Cocci, bacilli and spiral bacteria

Q.10 **_____ of the bacterial species have fairly constant characteristic cell shape:**
A) Some C) Most
B) Few D) All

Q.11 **The spherical or oval bacteria are called:**
A) Cocci C) Bacilli
B) Diplococcus D) Vibrio

Q.12 **If spherical bacteria divide at one plane, it will produce:**
A) A *diplococcus* arrangement
B) A *streptococcus* arrangement
C) Either a *diplococcus* or *streptococcus* arrangement
D) Neither a *diplococcus* or *streptococcus* arrangement

Q.13 **When cocci occur in pairs the arrangement is?**
A) *Diplococcus* C) *Streptococcus*
B) Diplobacillus D) Streptobacillus

Q.14 **When division of cocci is at two plane, it will produce:**
A) Sarcina C) Streptococcus
B) Tetrad D) Staphylococcus

Q.15 **When coccus divides in three planes it will produce?**
A) Cube of eight cocci
B) Chain of cocci
C) Square of four cocci
D) Pair of cocci

Q.16 **Misuse of antibiotics can cause following, EXCEPT:**
A) Discoloration of teeth in young children
B) Dumbness
C) Allergic reactions
D) Discoloration of teeth in young children, Causing deafness and allergic reactions

Q.17 **Misuse of streptomycin can cause:**
A) Deafness
B) Death
C) Allergic reactions
D) Discoloration of teeth

Q.18 Misuse of tetracycline and its related compounds cause:
A) Deafness
B) Death
C) Allergic reactions
D) Discoloration of teeth in young children

Q.19 When cocci are arranged irregularly, like clusters of grapes, the arrangement is called:
A) Streptococcus C) Tetracoccus
B) Sarcina D) Staphylococcus

Q.20 Pick up the bacteria with exceptional shape:
A) Square C) Spirillum
B) *Vibrio* D) Spirochete

Q.21 Exceptions to basic shapes of bacteria are:
A) Spindle shaped bacteria
B) Filamentous bacteria
C) Lobed bacteria
D) Spindle shaped, Filamentous, Lobed and Star like bacteria

Q.22 These are rod shaped bacteria:
A) Cocci C) Bacilli
B) Vibrio D) Spirochaete

Q.23 When rod shaped bacteria occur in pairs then arrangement of cells is known as?
A) Diplobacillus C) Streptobacillus
B) Bacillus D) Staphylobacillus

Q.24 Spirals come in one of the three forms which are:
A) Vibrio, curved or comma shaped
B) Spirochaete, curved or comma shaped
C) Spirillum, curved or comma shaped
D) Vibrio, Spirillum or Spirochaete shaped

Q.25 These are extremely thin, hair like appendages of bacteria:
A) Attachment C) Sex pili
B) Fimbriae D) Flagella

Q.26 In bacteria, flagella originate from:
A) Cell membrane C) Basal body
B) Cell wall D) Capsule

Q.27 Basal body is a structure in:
A) Cell wall C) Cytoplasm
B) Cell membrane D) Capsule

Q.28 When single polar flagellum is present in bacteria the condition is known as?
A) Atrichous C) Lophotrichous
B) Monotrichous D) Amphitrichous

Q.29 It is a condition when tufts of flagella at both poles of bacterium are present:
A) Atrichous C) Lophotrichous
B) Monotrichous D) Amphitrichous

Q.30 In this form, flagella surround the whole bacterial cell:
A) Monotrichous C) Amphitrichous
B) Lophotrichous D) Peritrichous

Q.31 Pili are:
A) Larger than flagella
B) Involved in motility
C) Smaller than flagella
D) Smaller than flagella and involved in motility

Q.32 Flagellin is a:
A) Lipid C) Phospholipid
B) Protein D) Nucleic acid

Q.33 It functions as a means of attachment of bacteria to various surfaces:
A) Flagella C) Mesosomes
B) Pili D) Appendages

Q.34 Beneath the extracellular substances and external to cytoplasmic membrane in bacteria:
A) Cell wall is present
B) Slime is present
C) Capsule is present
D) Cyst is present

Q.35 It also protects the cells from osmotic lysis:
A) Slime C) Cell wall
B) Capsule D) Slime capsule

Q.36 The technique of gram staining was developed by:
A) Christian Gram C) Edward Jenner
B) Louis Pasteur D) Robert Koch

Q.37 By gram staining technique gram positive bacteria are stained:
A) Blue C) Pink
B) Purple D) Black

Q.38 Gram –ve bacteria retain:
A) Primary dye C) Tertiary dye
B) Secondary dye D) Quaternary dye

Q.39 Gram +ve bacteria retain:
A) Primary dye C) Tertiary dye
B) Secondary dye D) Quaternary dye

Q.40 Number of major layers in gram –ve cell wall is:
A) 01 C) 03
B) 02 D) 04

Q.41 The percentage of peptidoglycan in Gram –ve cell wall is:
A) 10% C) 50%
B) 40% D) 30%

Q.42 Peptidoglycan content of gram –ve cell wall is _____ % less than that in Gram +ve cell wall.
A) 10 C) 50
B) 40 D) 30

Q.43 Which one of the following is missing in Gram +ve cell wall?
A) Peptidoglycan
B) Lipoteichoic acid
C) Teichoic acid
D) Lipopolysaccharide and Lipoproteins

Q.44 The percentage of lipids in Gram +ve cell wall:
A) 50% C) 11 – 12%
B) 1 – 4% D) 10%

Q.45 The percentage of lipids in Gram –ve cell wall is:
A) 50% C) 11 – 12%
B) 1 – 4% D) 10%

Q.46 Which one is not true with respect to Gram +ve cell wall?
A) Contains teichoic acid
B) No outer membrane
C) More permeability
D) Periplasmic space always present

Q.47 Pick up the character incorrect about Gram –ve cell wall:
A) Lipids 11 – 12%
B) Peptidoglycan dominant
C) Less permeable
D) Outer membrane present

Q.48 Cell wall characteristics of Gram +ve and Gram –ve bacteria are:
A) Found in all bacteria
B) Absent in some bacteria
C) Found in some bacteria
D) Absent in several groups of bacteria

Q.49 Unlike the cell wall of eubacteria, the cell wall of archaeobacteria lacks:
A) Proteins C) Peptidoglycans
B) Glycoproteins D) Polysaccharides

Q.50 Cell walls of archaeobacteria are composed of:
A) Protein, Peptidoglycans and polysaccharides
B) Protein, Glycoproteins and polysaccharides
C) Peptidoglycans, Glycoproteins and polysaccharides
D) Peptidoglycans, Teichoic acid and lipoteichoic acid

Q.51 Transport of proteins, nutrients, sugar and electrons or other metabolites to bacterial cells is regulated by:
A) Sterols
B) Phospholipids and proteins
C) Cholesterols
D) Sterols, Cholesterols and Phospholipids

Q.52 A bacterial cell, unlike the cells of eukaryotic organisms lacks:
A) Chromosomes
B) Discrete chromosomes
C) Nuclear region
D) Nuclear body

Q.53 The cytoplasmic matrix of a bacterial cell is a substance present between the:
A) Cell wall and nucleus
B) Plasma membrane and nucleus
C) Cell wall and nucleoid
D) Plasma membrane and nucleoid

Q.54 In bacterial cell, the cytoplasmic matrix is a major part of:
A) Protoplast C) Cytosol
B) Protoplasm D) Nucleoplasm

Q.55 Pick up the structure which is not part of cytoplasmic matrix of bacterial cell:
A) Chromatin body C) Mesosomes
B) Ribosomes D) Slime

Q.56 Nuclear material of bacterial cell is a single circular and:
A) Single stranded DNA molecule
B) Single stranded RNA molecule
C) Double stranded DNA molecule
D) Double stranded RNA molecule

Q.57 It aggregates as an irregular shaped dense area in the centre of the bacterial cell and is called:
A) Nucleoid
B) Chromatin body
C) Nuclear body
D) Nucleoid, Nuclear body, Chromatin body and Nuclear region.

Q.58 In *Escherichia coli* closed circular, chromosome measures approximately:
A) 140 µm C) 14000 µm
B) 1400 µm D) 140000 µm

Q.59 These are circular, double stranded DNA molecules of bacterial cell:
A) Chromosome and chromatin body
B) Chromosome and Plasmid
C) Plasmid and chromatin body
D) Nucleoid and nuclear body

Q.60 These are composed of RNA and proteins:
A) Chromosomes C) Plasmids
B) Ribosomes D) Mesosomes

Q.61 Pick up the one having no involvement of mesosomes:
A) DNA replication and cell division
B) Cell division and export of exocellular enzyme
C) Presence of respiratory enzymes
D) Survival in unfavorable environmental conditions

Q.62 Due to the shortage of supply of nutrients bacteria tend to:
A) Consume nutrients with conservative approach
B) Store extra nutrients when possible
C) Take nutrients from neighboring cells
D) Live without nutrients

Q.63 These are resistant to adverse physical environmental conditions such as light, temperature, desiccation, pH and chemical agents:
A) Cysts C) Mesosomes
B) Spores D) Vegetative cells

Q.64 Today, some antibiotics are synthesized in the laboratory. However, their origins are:
A) Living cells C) Actinomycetes
B) Bacteria D) Fungi

Q.65 _____ quantities of antibiotics are being prepared and used.
A) Massive C) Appropriate
B) Small D) Normal

Q.66 What is followed by the widespread problems of drug resistance in microorganisms:
A) Increasing resistance against disease treatment
B) Massive preparation of antibiotics
C) Massive use of antibiotics
D) Massive preparation and use of antibiotics

Q.67 Under favorable conditions, they germinate and form vegetative cells and otherwise remains dormant:
A) Cyst
B) Spores
C) Both cyst and spores
D) Mesosomes

Q.68 Control of microorganisms is essential in:
A) Home
B) Industry
C) Medical field
D) Home, industry and medical field

Q.69 Sterilization is destruction of:
A) Bacteria C) All life forms
B) Microorganisms D) Viruses

Q.70 For controlling microbes, microbiological labs usually use:
A) High temperature C) Filtration
B) Low temperature D) Radiations

Q.71 **_____ rays are in general used for sterilization process.**
A) X C) Ultraviolet
B) Gamma D) Infrared

Q.72 **Certain electromagnetic radiations below _____ nm are effective in killing microorganisms.**
A) 200 C) 300
B) 250 D) 350

Q.73 **The important chemical agents used for disinfections are:**
A) Oxidizing agents
B) Reducing agents
C) Oxidizing or reducing agents
D) Dehydrating agents

Q.74 **Bacterial growth refers commonly to an increase in the size of:**
A) Bacterial cells
B) Bacterial colony
C) Bacterial chromosomes
D) Bacterial mesosomes

Q.75 **Bacteria lack following, EXCEPT:**
A) Meiosis C) Gametogenesis
B) Fertilization D) Recombination

Q.76 **Ultraviolet radiations can be used to control microbial growth through:**
A) Sterilization C) Chemotherapy
B) Antisepsis D) Disinfectation

Q.77 **Spoilage of foods and other industrial products can be inhibited by:**
A) Sterilization
B) Controlling microorganisms
C) Disinfectation
D) Antisepsis

Q.78 **Antisepsis, disinfectation and chemotherapy differ from each other with respect to:**
A) Nature of agent being used
B) Site at which being used
C) Type of microbes being killed
D) Duration of the treatment

Q.79 **The important chemical agents used for disinfection are:**
A) Oxidizing and reducing agents
B) Microbistatic agents
C) Mutagenic agents
D) Desiccating agents

Q.80 **Following are the chemical agents used as disinfectants, EXCEPT:**
A) Sulfonamides and tetracycline
B) Halogens and phenols
C) Hydrogen peroxide and potassium
D) Alcohol and formaldehyde

Q.81 **DNA of bacterium is:**
A) Haploid, single stranded, coiled
B) Diploid, double stranded, coiled
C) Haploid, double stranded, coiled
D) Diploid, single stranded, coiled

Q.82 **Cell membrane invaginates into cytoplasm to form pocket like structure called:**
A) Plasmid C) Capsule
B) Nucleoid D) Mesosome

Q.83 **_____is the only genus of bacteria known to lack cell wall:**
A) *Salmonella* C) *Mycoplasma*
B) *Mycobacterium* D) *Hypomicrobium*

Q.84 **It is a very sticky, gelatinous structure made up of polysaccharides and proteins:**
A) Capsule C) Slime
B) Pilli D) Cell wall

Q.85 **Sometimes a piece of DNA of donor bacterium may attached to the DNA of phage, the recombinant DNA is known as:**
A) Bacteriophage C) Provirus
B) Prophage D) Oncovirus

Q.86 **Type of bacterium possess flagella dispersed on the entire surface of the cell is:**
A) Monotrichous C) Peritrichous
B) Lophotrichous D) Atrichous

Q.87 **The hook and the filament of flagellium is made up of a protein called:**
A) Pilin C) Collagen
B) Flagellin D) Myosin

Q.88 **Enzymes for cellular respiration in prokaryotes are located at:**
A) Mitochondria C) Nucleoid
B) Ribosomes D) Cell membrane

Q.89 **_____ is used to inactivate bacteria in vaccines:**
A) Aldehyde C) Formalin
B) Phenolics D) Ethylene oxide

Q.90 **Part of bacterial cytoplasm where its DNA is located is called:**
A) Mesosome C) Nucleus
B) Nucleoid D) Ribosome

Q.91 **Bacteria bearing single flagella are called:**
A) Monotrichous C) Amphitrichous
B) Lophotrichous D) Peritrichous

Q.92 **The type of cell division by which prokaryotes reproduce; each dividing daughter cell receives a copy of single parental chromosome is called:**
A) Conjugation C) Transformation
B) Transduction D) Binary fission

Q.93 **All are related to pilli in bacteria, EXCEPT:**
A) Small filamentous appendages
B) No role in motility
C) Made up of pillin protein
D) Prevent dehydration

Q.94 **The rod shape bacterium that can cause tetanus:**
A) *Salmonella typhi* C) *Diplobacillus*
B) *Clostridium tetani* D) *Streptococci*

Q.95 **_____ is dry heat treatment of sterilization of disposable item such as paper cups dressing etc.:**
A) Sterilization
B) Pasteurization
C) Incineration
D) Autoclaving

Q.96 **Glutaraldehyde is less irritating but more effective than:**
A) Ethylene oxide C) Dettol
B) Formalin D) Spirit

Q.97 **A curved gram – negative bacterium that can cause cholera is:**
A) *Salmonella typhi*
B) *Vibrio cholera*
C) *Mycobacterium tuberculosis*
D) *Streptococcus pneumonia*

Q.98 **Heating to 100 C^{o} or more kills vegetative forms of bacterial pathogens within _____ minutes:**
A) 10 C) 30
B) 20 D) 40

Q.99 **_____ are lipopolysaccharide complexes present in the cell wall as constituent in gram – negative bacteria:**
A) Exotoxins C) Capsules
B) Endotoxins D) Slimes

ANSWER KEY (Worksheet-14)							
1	B	26	C	51	B	76	A
2	D	27	C	52	B	77	B
3	A	28	B	53	D	78	B
4	B	29	D	54	A	79	A
5	B	30	D	55	D	80	A
6	A	31	C	56	C	81	A
7	A	32	B	57	D	82	D
8	B	33	B	58	C	83	C
9	D	34	A	59	B	84	A
10	C	35	C	60	B	85	B
11	A	36	A	61	D	86	C
12	C	37	B	62	B	87	B
13	A	38	B	63	B	88	D
14	B	39	A	64	A	89	C
15	A	40	B	65	A	90	B
16	B	41	A	66	D	91	A
17	A	42	B	67	C	92	D
18	D	43	D	68	D	93	D
19	D	44	B	69	C	94	B
20	A	45	C	70	A	95	C
21	D	46	D	71	B	96	B
22	C	47	B	72	C	97	B
23	A	48	D	73	C	98	A
24	D	49	C	74	B	99	B
25	D	50	B	75	D		

EXPLAINATION

Q.1 **Answer is "Cell Wall"**
Explanation: Cell wall being a rigid covering provides shape to the bacterium.

Q.2 **Answer is "Capsule"**
Explanation: Capsule is an outer wrapping or envelope found in certain bacterial cells but missing in others. The bacteria having it are called encapsulated and make smooth surfaced colonies. They are more virulent for host and resistant against host immune system. The bacteria which lack capsule are called non-encapsulated and make rough surfaced colonies and are vulnerable to host immune system that is why they are genus less virulent.

Q.3 **Answer is "Cell Wall"**
Explanation: Cell wall is missing in genus Mycoplasma only.

Q.4 **Answer is "over a single dimension"**
Explanation: It is applicable to rod shaped bacteria particularly.

Q.5 **Answer is "Size as well as in shape"**
Explanation: Bacteria are diverse with respect to size and shape.

Q.6 **Answer is "Pox virus"**
Explanation: Smallest bacteria have the size equal to the largest virus and that is of pox virus.

Q.7 **Answer is "0.75 to 1.25 μm"**
Explanation: Staphylococci and streptococci are 0.75–1.25 u in diameter.

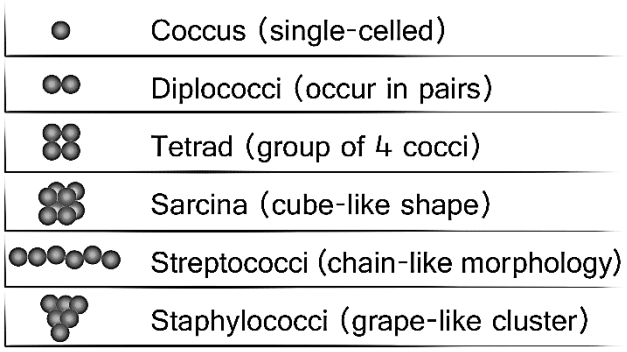
Q.8 **Answer is "Three categories"**
Explanation: Round (cocci), rod shaped (bacilli) and spiral.

Q.9 **Answer is "Cocci, bacilli and spiral bacteria"**
Explanation: Generally bacteria are round (Cocci), red shaped (Bacilli) and helical (spirilli).

Q.10 **Answer is "Most"**
Explanation: Some are pleomorphic (capable to change their shape). Whereas most of the bacteria have specific shape

Q.11 **Answer is "Cocci"**
Explanation: These are round or spherical in shape.

Q.12 **Answer is "Either diplococcus or streptococcus arrangement"**
Explanation: Repeated division at same single plane gives rise to monococci if daughter cells get separated after division or give rise to diplococci. When daughter cells remain attached in pairs give rise to streptococcus arrangement if daughter cells remain attached in chain.



Q.13 Answer is "Diploococcus"
Explanation: A pair of round bacteria is called diplococcus.

Q.14 Answer is "Tetrad"
Explanation: A square of four round bacteria.

Q.15 Answer is "Cube of 8 Cocci"
Explanation: It is called sarcina.

Q.16 Answer is "Dumbness"
Explanation: It is deafness which is caused by streptomycin which affect the auditory nerves, not dumbness.

Q.17 Answer is "Deafness"
Explanation: As it affects the auditory nerves.

Q.18 Answer is "Discoloration of teeth in young children"
Explanation: It is side effect of tetracycline antibiotic.

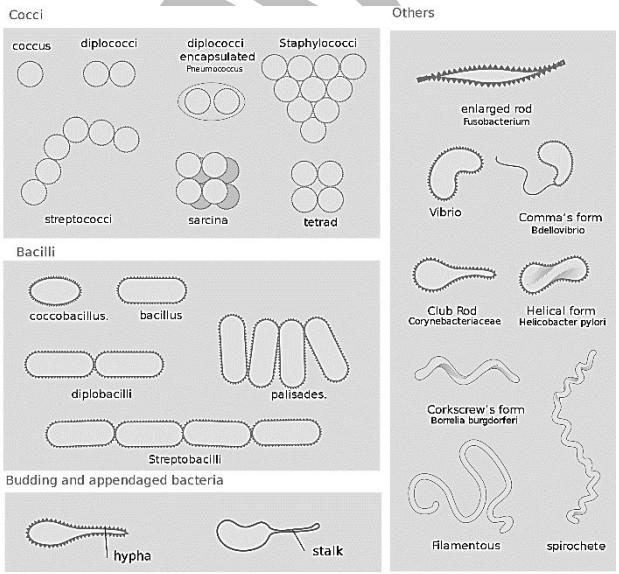
Q.19 Answer is "Staphylococcus"
Explanation: It is consequence of repeated cell divisions at random planes and daughter cells remain attached after cell division.

Q.20 Answer is "Square"
Explanation: Other than round, rod or spiral shape, rest of the shapes are considered exceptional shapes in bacteria.

Q.21 Answer is "Spindle shaped, Filamentous, Lobed and star like bacteria"
Explanation: Exceptions to three common shapes (round, rod shaped and helical) in bacteria are trichome forming, sheathed, stalked, square, star-shaped, lobed and filamentous bacteria.

Q.22 Answer is "Bacilli"
Explanation: Bacilli is plural of bacillus which means rod shaped bacterium.

Q.23 Answer is "Diplobacillus"
Explanation: It is consequence of single division and daughter cells remain attached after division.



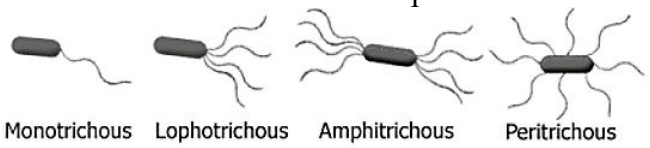
Q.24 Answer is "Vibrio, Spirillum, or spirochete shaped"
Explanation: Vibrio is comma shaped or curved bacterium. Spirillum is a helical bacterium with thin and flexible walls whereas spirochete is a helical bacterium with thick and rigid walls.

Q.25 Answer is "Flagella"
Explanation: Flagella are extremely thin hair like appendages, whereas pili are non-helical, filamentous appendages. Pili are smaller than flagella and are not involved in motility. They act as sex pili to make a conjugation tube on one hand and act as organ of attachment on other hand. An attachment pilus is also called fimbria.

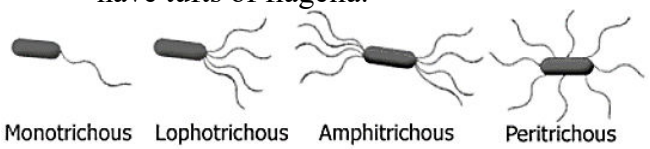
Q.26 Answer is "Basal body"
Explanation: That body is located just inside the cell membrane in cytoplasm and flagellum originates from it.

Q.27 Answer is "Cytoplasm"
Explanation: Basal body is located inside the cytoplasm

Q.28 Answer is "Monotrichous"
Explanation: Mono means single and trichous means hair like part.



Q.29 Answer is "Amphitrichous"
Explanation: Amphi means two and trichous means hair like part i.e. having two hair like ends. In this case both ends have tufts of flagella.



Q.30 Answer is "Peritrichous"
Explanation: Peri means around and trichous means hair like part. When flagella are present all around the surface

Q.31 Answer is "Smaller than flagella"
Explanation: Pili have shorter length as compared to flagella. However, they are not involved in motility rather they are organs of attachment and conjugation.

Q.32 Answer is "Protein"
Explanation: Flagellin is a globular protein that arranges itself in a hollow cylinder to form the filament in a bacterial flagellum. It is the principal component of bacterium flagellium

Q.33 Answer is "Pili"
Explanation: Pili are organs of attachment and adsorption for bacteria. They are also called fimbriae or attachment pili.

Q.34 Answer is "Cell wall is present"
Explanation: Cell wall is located outer to the bacterial protoplast and inner to the capsule or slime.

Q.35 Answer is "Cell wall"
Explanation: Due to its rigidity cell wall is capable to resist any osmotic pressure or turgor pressure.

Q.36 Answer is "Christian Gram"
Explanation: Hans Christian Gram was a medical student, who developed the Gram staining procedure.

Q.37 Answer is "Purple"
Explanation: Purple dye makes a crystal violet iodine complex (CVI complex) with peptidoglycan of G +ve cell wall. It is first stain which is retained by a gram +ve bacteria.

Q.38 Answer is "secondary dye"
Explanation: It is pink dye used as a counter stain. Commonly it is safranin or fuschin.

Q.39 Answer is "Primary dye"
Explanation: It is purple dye made up of crystal violet and iodine solution.

Q.40 Answer is "02"
Explanation: Inner peptidoglycan layer and outer lipid layer.

Q.41 Answer is "10%"
Explanation: It is 50% in G +ve cell wall.

Q.42 Answer is "40%"
Explanation: As it is 50% for G +ve cell wall and 10% for G –ve cell wall. Thus the net difference in that of 40% i.e. G +ve cell wall have comparatively 40% more peptidoglycan as compared to G -ve cell wall.

Q.43 Answer is "Lipopolysaccharide and Lipoproteins "
Explanation: These are part of Gram – ve cell wall.

Q.44 Answer is "1 – 4%"
Explanation: It is 11 – 12% in G +ve cell wall.

Q.45 Answer is "11 – 12%"
Explanation: Lipids constituent 11 – 12% of Gram -ve cell wall.

Q.46 Answer is "periplasmic space always present"
Explanation: Periplasmic spaces is present in some G +ve bacteria.

Q.47 Answer is "Peptidoglycan dominant"
Explanation: Peptidoglycan is only 10%.

Q.48 Answer is "absent in several groups of bacteria"
Explanation: For example Archaeobacteria which consists of several phyla.

Q.49 Answer is "Peptidoglycan"
Explanation: In most archea the wall is assembled from surface layer proteins, which form an S.layer. However, the cell wall of archaea bacteria is made up of proteins glycoproteins and polysaccharides.

Q.50 Answer is "Proteins, Glycoproteins and polysaccharide"
Explanation: It lacks peptidoglycan.

Q.51 Answer is "Phospholipids and proteins"
Explanation: These are the constituent components of plasma membrane.

Q.52 Answer is "Discrete chromosomes"
Explanation: Bacterial chromosome is a double circular DNA entirely different from eukaryotic chromosome.

Q.53 Answer is "Plasma membrane and nucleoid"
Explanation: It is the storage site of bacterial cell.

Q.54 Answer is "Protoplast"
Explanation: Prokaryotic cell is extremely small in size and lack a lot of organelles.

Q.55 Answer is "Slime"
Explanation: It is a type of bacterial envelope or outer wrapping or extracellular matrix.

Q.56 Answer is "Double stranded DNA molecule"
Explanation: Bacterial chromosome or DNA is a double stranded helical ring structure.

Q.57 Answer is "Nucleoid, Nuclear body, Chromatin body or nuclear region"
Explanation: It is central darker area of bacterial cell which contains bacterial DNA.

Q.58 Answer is "14000 µm"
Explanation: In *Escherichia coli* closed circular chromosome measures approximately 14000µm.

Q.59 Answer is "Chromosome and plasmid"
Explanation: Both are circular and double stranded.

Q.60 Answer is "Ribosomes"
Explanation: Ribosomes are ribonucleo protein particles.

Q.61 Answer is "Survival in unfavorable environmental conditions"
Explanation: This is the function of spore or cyst not that of mesosome.

Q.62 Answer is "Store extra nutrients when possible"
Explanation: Because bacteria cannot move freely in search of food.

Q.63 Answer is "Spores"
Explanation: Spore provides overall resistance whereas cyst provides selective resistance (against desiccation only).

Q.64 Answer is "Living cells"
Explanation: Biological antibiotics.

Q.65 Answer is "Massive"
Explanation: Antibiotics are used in massive quantity.

Q.66 Answer is "Massive preparation and use of antibiotics"
Explanation: As antibiotics are used again and again the microorganisms become resistant against them and as a result new antibiotics with different mode of action are required to be prepared.

Q.67 Answer is "Both cyst and spores"
Explanation: Spores and cysts are dormant bodies which germinate in favorable conditions only.

Q.68 Answer is "Home, industry and medical filed"
Explanation: The threat of microbial contamination is everywhere.

Q.69 Answer is "All life forms"
Explanation: Use of physical agents like high or low temperature and radiations to control bacteria/microorganisms is known as sterilization process. However, these physical agents kill all life forms indiscriminately.

Q.70 Answer is "High temperature"
Explanation: High temperature is microbicardial. Whether it is dry heat or moist heat (steam). In dry heat the proteins of plasma membranes of microorganisms are oxidized whereas in moist heat these are coagulated and death is the ultimate consequence.

Q.71 Answer is "Gamma"
Explanation: Gamma rays have the smallest wavelengths and the most energy of any other wave in the electromagnetic spectrum.

Q.72 Answer is "300"
Explanation: Low wave length radiations are high energy.

Q.73 Answer is "Oxidizing or reducing agents"
Explanation: Oxidizing or reducing agents destroy the structure of biological membranes particularly cell membrane, as a result microbes are killed.

Q.74 Answer is "Bacterial colony"
Explanation: By growth in bacteria, we mean an increase in the number of cells in the colony. So, size of colony increases.

Q.75 Answer is "Recombination"
Explanation: In traditional sexual reproduction gametogenesis occurs in male and female gonads through meiosis. Then fertilization occurs and zygote is formed. By the development from that zygote an offspring is obtained. However, in bacteria none of it occurs and the benefit of recombination is achieved through a special process called conjugation.

Q.76 Answer is "Sterilization"
Explanation: Radiations are also used as a physical method of control which is called as sterilization as well.

Q.77 Answer is "Controlling microorganisms"
Explanation: Microorganisms particularly bacteria and fungi are big spoilers of food stuffs. If their growth is checked spoilage will avoided

Q.78 Answer is "Site at which being used"
Explanation: Antiseptics are used at living surface, whereas disinfectants are used on non-living surface, however chemotherapeutic agents are used inside the living tissue or living body.

Q.79 Answer is "Oxidizing and reducing agents"
Explanation: Oxidizing and reducing agents destroy the structure of the cell membranes of microorganisms.

Q.80 Answer is "Sulfonamide and tetracycline"
Explanation: Sulfonamide and tetracycline are antibiotics.

Q.81 Answer is "Haploid, single stranded, coiled"
Explanation: The nuclear material or DNA in bacterial cells occupies a position near to the center of cell. This material is a single, circular and double stranded DNA molecule.

Q.82 Answer is "Mesosome"
Explanation: The cell membrane, invaginates into the cytoplasm forming structure called as mesosome. Mesosomes are in the form of vesicles, tubules or lamellae.

Q.83 Answer is "*Mycoplasma*"
Explanation: . *Mycoplasma* is the only genus of bacteria known to lack cell wall.

Q.84 Answer is "Capsule"
Explanation: Many species of bacteria possess a tight protective covering around the cell called capsule. It is very sticky, gelatinous structure made up of polysaccharide and proteins. These bacteria are called capsulated bacteria.

Q.85 Answer is "Prophage"
Explanation: Sometimes a piece of DNA of donor bacterium may attached to the DNA of phage, the recombinant DNA is known as prophase.

Q.86 Answer is "Peritrichous"

Explanation: Type of bacterium possess flagella dispersed on the entire surface of the cell is peritrichous.

Monotrichous	Single polar flagella
Lophotrichous	Tuft of flagella at one pole of bacteria
Peritrichous	Flagella surrounds the whole cell
Atrichous	Without any flagellum

Q.87 Answer is "Flagellin"

Explanation: The hook and the filament of flagellium is made up of a protein called flagellin.

Q.88 Answer is "Cell membrane"

Explanation: The enzyme involved in the production of energy are all located in the cell membrane and in this way it resembles the membrane of mitochondrion in eukaryotic cell. It helps in the replication of DNA.

Q.89 Answer is "Formalin"

Explanation: Formalin is used to inactivate bacteria in vaccines.

Q.90 Answer is "Nucleoid"

Explanation: Part of bacterial cytoplasm where its DNA is located is called nucleoid. Other names for nucleoid are nucleus body, chromatin body and nuclear region. The nuclear material or DNA in bacterial cells occupies a position near to the center of cell.

Q.91 Answer is "Monotrichous"

Explanation:

Monotrichous	Single polar flagella
Lophotrichous	Tuft of flagella at one pole of bacteria
Peritrichous	Flagella surrounds the whole cell
Atrichous	Without any flagellum

Q.92 Answer is "Binary fission"

Explanation: The type of cell division by which prokaryotes reproduce; each dividing daughter cell receives a copy of single parental chromosome is called binary fission.

Q.93 Answer is "Prevent dehydration"

Explanation: Pilli help the bacteria to attach to various surfaces but in some cases they are involved in the transfer of genetic material from one another bacterium. Most capsules are hydrophilic and may help the bacterium avoid desiccation (dehydration) by preventing water loss.

Q.94 Answer is "*Clostridium tetani*"

Explanation: The rod shape bacterium that can cause tetanus is *Clostridium tetani*.

Q.95 Answer is "Incineration"

Explanation: Incineration is dry heat treatment of sterilization of disposable item such as paper cups dressing etc.

Q.96 Answer is "Formalin"

Explanation: Glutaraldehyde is less irritating but more effective than formalin. It is used to disinfect hospital instruments.

Q.97 Answer is "*Vibrio cholera*"

Explanation: A curved gram – negative bacterium that can cause cholera is *Vibrio cholera*.

Q.98 Answer is "10"

Explanation: Heating to 100 C^o or more kills vegetative forms of bacterial pathogens within 10 minutes.

Q.99 Answer is "Endotoxins"

Explanation: Endotoxins are lipopolysaccharide complexes present in the cell wall as constituent in gram – negative bacteria.

STEP

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