

Section – B

Q1: Attempt any 9 of the following.

Allowed time 2 hours 40 minutes

Maximum Marks 36

- i. If $A = \begin{bmatrix} 2 & 1 \\ 0 & 7 \end{bmatrix}$ and $B = \begin{bmatrix} -5 & 7 \\ 9 & 2 \end{bmatrix}$ are matrices show that $A+B=B+A$
- ii. Find the product $(a-1)(a^2+a+1)$
- iii. Factorize $4x^4+81$
- iv. Divide $Z_1=2+3i$, by $Z_2=5-i$
- v. If $x = \sqrt{3} - \sqrt{2}$, find the values of $x - \frac{1}{x}$
- vi. Find L.C.M by factorization of $x+y$, x^2-y^2
- vii. Sum of three consecutive integers is 39, find the integers
- viii. Find the solution set of the equation $6x-5=2x+9$
- ix. Show that A (-1, 2), B (7, 5) and C(2,6) are the vertices of scalene triangle
- x. Prove that $\log_b pq = \log_b p + \log_b q$
- xi. If two angles of a triangle are congruent then the sides opposite to them are also congruent.
- xii. Prove that each diagonal of a parallelogram divides it into two congruent triangles.

Section – C

Attempt any 4 of the following.

Maximum Marks: 24

- Q2. The bisectors of angles of triangle are concurrent.
- Q3. The lengths of two sides of triangle are 11 and 23 and the length of third side is X. Find the range of possible values of X.
- Q4. If a line segment intersects the two sides of a triangle in the same ratio then it is parallel to third side.
- Q5. In a right-angled triangle, the square of the length of hypotenuse is equal to the sum of the squares of the lengths of the other two sides.
- Q6: Construct triangle **KML** when length of its two sides **ML** and **KM** are 5.4 cm and 3.1 cm respectively and $\angle M = 105^\circ$
- Q7: Parallelogram on the same base and lying between the same parallel lines (or of the same altitude) are equal in area.