ESKP-09XIII01

MATHEMATICS (9th) — New Book

Time Allowed: 2 Hours 40 Minutes

SECTION-B

Max. Marks: 36

2. Attempt any nine of the following. All carry equal marks.

i. Solve the equation by Cramer's Rule: $2x-y=6$ and $x-2y=5$

ii. Simplify $\left[\frac{(a+b)^2\cdot(c+d)^3}{(a+b)\cdot(c+d)^2}\right]^3$

iii. Simplify with the help of logarithm $\frac{2.83}{(6.52)^2}$

iv. If $x+\frac{1}{x}=\frac{5}{2}$ then find the value of $x^3+\frac{1}{x^3}$

v. If $x=\sqrt{5}+2$ then find the value of $x+\frac{1}{x}$ and $x^2+\frac{1}{x^2}$

vi. Find HCF by division $x^3-x^2-10x-8$ and $x^3-2x^2-13x-10$

vii. Factorize ab^3+2b^2-ab-2

viii. Simplify $\frac{x^2-x-6}{x^2+6x+9}\div\frac{x^2-4}{x+3}$

ix. Find LCM by factorization x^2-4x+4 and x^2-4

x. Find solution set of equation $7x-13=2x+2$

xi. For what value of k the expression $4x^4+32x^2+96+\frac{128}{x^2}+\frac{k}{x^4}$ will become a perfect square.

xii. If breadth of a room is one fourth of its length and the perimeter of the room is 20m, find length and breadth of the room.

SECTION-C

Max. Marks: 24

NOTE: Attempt any three of the following questions. All questions carry equal marks.

3. Find the centroid of the triangle whose vertices $(3,-5)$, $(-7,4)$ and $(10,-2)$.

4. If two angles of a triangle are congruent then prove that the sides opposite to them are also congruent.

5. Prove that the bisectors of the angles of a triangle are congruent.

6. Construct ΔKLM and draw their altitudes when $m\angle L=45^\circ$, $m\overline{KL}=5.5cm$ and $m\angle K=60^\circ$.