Total Time: 2:40 Hours

Mathematics (9th)

(Fresh/New Course)

Total Marks: 60

"Section-B"

Marks: 36

Q. 2. Attempt any Nine (9) of the following parts. Each part carries equal marks.

(i) Find the inverse of $= \begin{bmatrix} 0 & -3 \\ 2 & 4 \end{bmatrix}$

(ii) Find the HCF of $x-3$, x^2-9, $(x-3)^2$ by factorization method.

(iii) Simplify : $\left(\frac{25}{81}\right)^{\frac{1}{2}}$

(iv) Find anti-logarithm of 0.8401

(v) Find the value of $a^2 + b^2$, when $a + b = 10, a - b = 6$

(vi) If $x = 5 - 2\sqrt{6}$, find the values of $x + \frac{1}{x}$ and $x^2 + \frac{1}{x^2}$

(vii) Factorize : $6x^3 - 15x^2 - 9x$

(viii) Factorize : $a^3 - 64b^3$

(ix) Find the square root of $4x^4 - 4x^3 + 18x^2 - 6x + 9$ by division method.

(x) Solve the equation $\sqrt{2x-7} + 8 = 11$

(xi) Find the solution set of $\left|\frac{3}{4}x - 8\right| = 1$

(xii) The length of a rectangular playground is twice its width. The perimeter is 60. Find its dimensions.

"Section-C"

Marks: 24

Note:- Attempt any Three (3) questions. Each question carries equal marks.

Q. 3. Prove that: A(2, 3), B(8, 11) and C(0, 17) are the vertices of an isosceles triangle.

Q. 4. Prove that: If two opposite sides of a quadrilateral are congruent, then the quadrilateral is a parallelogram.

Q. 5. Prove that: The right bisectors of the sides of a triangle are concurrent.

Q. 6. Construct $\triangle ABC$, draw their angle bisectors and verify their concurrency.

$m\overline{AB} = 4.5$ cm, $m\overline{BC} = 3.1$ and $m\overline{CA} = 5.2$ cm