SECTION – B

Q2: Answer any NINE parts. Each part carries equal marks.

i. Solve $\dfrac{2}{3} - \dfrac{1}{12} = \dfrac{1}{24}$ by Quadratic formula.

ii. Solve $\sqrt{29} \cdot 4 = 2 + 3$.

iii. For what value of K, the roots of the equation $Kx^2 + 2x + 1 = 0$ are real.

iv. Evaluate $(1 + 3\omega + \omega^2)(1 + \omega - 2\omega^2)$.

v. Show that -1 and 2 are roots of the equation $x^4 - 5x^3 + 3x^2 + 7x - 2 = 0$. Use synthetic division to find other roots.

vi. If $y \propto x$, when $x = 4$, $y = 2$, then find
(i) y when $x = 6$ (ii) x, when $y = 3.5$

vii. If $10 : 25 : x$ are in continued proportion, find the value of x.

viii. Express $\dfrac{2x^2 + 5x - 6}{x + 1}$ as sum of polynomial and proper rational fraction.

ix. If $A = \{3, 4, 5\}$, $B = \{5, 6, 7\}$ and $C = \{8, 9, 10\}$, then show that $(A \cup B) \cup C = A \cup (B \cup C)$

x. If $x = \{1, 2, 3, 4\}$ and $y = \{5, 6, 7, 8\}$, then write:
(i) a function from x to y
(ii) a one-one function from x to y

xi. Convert $39°48'55''$ to decimal form.

xii. Show that $\cos^2\theta - \sin^2\theta = 2\cos^2\theta - 1$.

SECTION – C

Marks: 24

Note: Attempt any THREE of the following questions. All questions carry equal marks.

Q3. If two chords of a circle are congruent then they will be equidistant from the centre.

Q4. If a line is drawn perpendicular to a radial segment of a circle at its outer end point, it is tangent to the circle at that point.

Q5. Equal chords of a circle subtend equal angles at the centre.

Q6. Circumscribe a square about a circle of radius 5cm.