Board of Secondary Education

Subject: Mathematics

Class: 10th

Time Allowed: 3 Hours

Maximum Marks: 75

Year: Sample 2024

SECTION A – MCQs (12 Marks)

Q1. Choose the correct answer:

i) $(x + 2)(x - 2)$ = ?

  a) $x^2 - 4$ b) $x^2 + 4$ c) $2x - 2$ d) None

ii) If $\sin\theta = 3/5$, then $\cos\theta$ = ?

  a) 4/5 b) 5/4 c) 3/4 d) None

(… total 12 MCQs)

SECTION B – Short Questions (25 Marks)

Q2. Attempt ANY FIVE:

i) Solve: $5x - 7 = 18$

ii) Factorize: $x^2 - 9x + 20$

iii) The mean of 6 numbers is 15. If 5 numbers are 10, 12, 14, 16, 18, find the 6th.

iv) Construct a histogram for data: (10–20: 5, 20–30: 7, 30–40: 8, 40–50: 10)

v) Write first four terms of the series: a = 2, d = 3

vi) Find roots of equation: $x^2 - 5x + 6 = 0$

SECTION C – Long Questions (38 Marks)

Q3. A train travels 60 km in 1 hour and 30 minutes. Find its speed in km/hr and m/s.

Q4. Find the probability of getting a prime number when a die is rolled.

Q5. A rectangular park has length 50 m and breadth 30 m. Find its area and perimeter.

Q6. Differentiate: $f(x) = 3x^2 + 4x - 5$