

Time: 35 min.

CLASS TEST
MATHEMATICS

DATE: 22/05/26

F.M.-15

MCQ & Assertion-Reason $1 \times 3 = 3$

1) The pair of equations $x+2y+5=0$ and $-3x-6y+1=0$ has —

- (a) a unique solⁿ (b) Exactly two solⁿ.
(c) Infinitely many solⁿ (d) No solⁿ

2) If α and β are the zeroes of the polynomial x^2-5x+k , such that $\alpha-\beta=1$, the value of k is —
(a) 4 (b) 5 (c) 6 (d) 8

3) Assertion (A): The quadratic eqn. $2x^2-4x+3=0$ has no real roots.

Reason (R): Discriminant of a quadratic eqn. $ax^2+bx+c=0$, is $D=b^2-4ac$.

- (a) $A \checkmark R \checkmark E \checkmark$ (b) $A \checkmark R \checkmark E \times$ (c) $A \checkmark R \times$ (d) $A \times R \checkmark$

Subjective Question: $3 + 5 = 8$

4) Solve for x and y : $\frac{2}{x-1} + \frac{3}{y+1} = 2$; 3
 $\frac{3}{x-1} - \frac{2}{y+1} = \frac{5}{3}$ $\begin{bmatrix} x \neq 1 \\ y \neq -1 \end{bmatrix}$

5) If a boy's age and his father's age amount together to 24 years. Fourth part of the product of their ages exceeds the boy's age by 9 years. Find the present age of the boy & his father. 5

■ Case Study: [4 marks]

5) A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, ..., 15. All outcomes are equally likely. A player wins a prize if the arrow points at —

① Event A: a prime number

② Event B: a multiple of 4

Based on above, answer the following questions:

5) (i) Calculate the probability of event A. [1]

5) (ii) Calculate the probability of event B. [1]

6) (iii) Find the probability that the arrow points at a number which is neither a prime no. nor a multiple of 4. [2]