

Answers to this Paper must be written on the paper provided separately.

You will **not** be allowed to write during the first **15** minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

Attempt **all** questions from **Section A** and **any four** questions from **Section B**.

All working, including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer.

Omission of essential working will result in loss of marks.

The intended marks for questions or parts of questions are given in brackets []

Mathematical tables are provided.

SECTION A

Answer all questions from this Section

Question 1

- a) When $x^3 + 2x^2 + kx + 10$ is divided by $x - 2$, the remainder is k . Find the value of k . Hence, determine whether $(x + 5)$ is also a factor. (3)
- b) Given $A = \begin{bmatrix} 2 & -1 \\ 2 & 0 \end{bmatrix}$, $B = \begin{bmatrix} -3 & 2 \\ 4 & 0 \end{bmatrix}$ and $C = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$, find the matrix X such that $A + X = 2B + C$. (3)
- c) The line segment joining $A(4,7)$ and $B(-6,-2)$ is intercepted by the y -axis at the point K . Write down the abscissa of the point K . Hence find the ratio in which K divides AB . Also, find the co-ordinates of the point K . (4)

Question 2

- a) A book contains 85 pages. A page is chosen at random. What is the probability that the sum of the digits on the page is 8? (3)
- b) Solve for x and give your answer to 2 decimal places.
 $2x^2 - 10x + 5 = 0$ (3)
- c) Rishabh has a recurring deposit account in a bank for 3 years at 8% p.a. simple interest. If he gets ₹ 9,990 as interest at the time of maturity, find (i) the monthly installment (ii) the amount of maturity. (4)

Question 3

- a) An A.P. consists of 50 terms of which 3rd term is 12 and the last term is 106. Find the 29th term of the A.P. (3)
- b) A man sold 400 ₹ 20 shares of a company, paying 5% at ₹ 18 and invested the proceeds in Rs 10 shares of another company paying 7% at ₹ 12. How many ₹ 10 shares did he buy and what was the change in his income? (3)

