Maximum Marks : 80   **Time Allowed : 3 hours**

1. The question paper is divided into four sections (A, B, C, D) Divided into.

2. All questions are compulsory.

3. Marks are given separately for the questions of each section.

4. MCQ (There is only one correct answer in the multiple-choice question).

5. Write the answers in short and long answer questions clearly and in order.

6. Draw neat drawings and sketches if necessary.

7. calculator, Use of mobile or any other electronic device is prohibited.

8. Correct symbol when writing the answer, Use formulas and equations.

9. Write the final answer in a neat box so that the examiner can easily see.

10. Manage the time correctly and solve the questions with more marks first.

Section A – MCQ (Multiple Choice Questions)

- Question no. 10

- Marks per question: 1

- Aggregate marks: 10

Section B – Very Short Answer

- Question no. 10

- Marks per question: 2

- Aggregate marks: 20

Section C – Short Answer/Reply Case Study

- Question no. 10
- Marks per question: 4
- Aggregate marks: 40

Section D – Long Answer

- Question no. 5
- Marks per question: 6
- Aggregate marks: 30

all total

- Total Questions: 35
- Aggregate marks: 80

Section A (1×10 = 10 points)

1. If $\sin A = \frac{1}{2}$ Yes, at that time A What is the value of?

   (a) 30°

   (b) 45°

   (c) 60°

   (d) 90°

2. $\frac{d}{dx}(x^2 + 3x)$ What is the differential of?

   (a) $x + 3$

   (b) $2x + 3$

   (c) $x^2 + 3$

   (d) $2x^2 + 3$

3. $\int 1\, dx$ What is the value of?

   (a) 1

   (b) x

   (c) $x + C$

   (d) C

4. cos 0° What is the value of?

 (a) 0

 (b) 1

 (c) ½

 (d) -1

5. If the two events are independent, at that time $P(A \cap B)$ What will happen?

 (a) P(A) + P(B)

 (b) P(A) × P(B)

 (c) P(A) − P(B)

 (d) 1

6. If x = 2, y = 3, at that time x + y What is the value of?

 (a) 2

 (b) 3

 (c) 5

 (d) 6

7. So 45° What is the value of?

 (a) 0

(b) 1

(c) √3

(d) √2

8. If $\int x \, dx = ?$

(a) $x^2/2 + C$

(b) $x^2 + C$

(c) $2x + C$

(d) $x + C$

9. Which of the following is a matrix??

(a) $2x + 3$

(b) [[1,2],[3,4]]

(c) $x^2 + y^2$

(d) without x

10. What is the maximum value of probability?

(a) 0

(b) 1

(c) 2

(d) ∞

Section B: Very short answer (2×10 = 20 marks)

1. If there is $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, at that time A The order of (order) What is it? what do you say? what is the matter??

2. $f(x) = x^3$ The divergence of (derivative) Find out.

3. f x dx Write the solution.

4. So 60° Find the value of .

5. If two events A and B Be independent, at that time P(A ∩ B) Write the formula.

6. without 30° Find the value of .

7. Unit matrix (Identity Matrix) Write the definition of.

8. f 2 dx Find the solution.

9. cos 60° Write the value.

10. Differential (Derivative) Write an application.

Section c: Short Answer Questions (4×10 = 40 Marks)

1. Solve the following integrations:

$$\int (2x + 5)dx$$

2. Solve the following linear equations using the matrix method:

x + y = 7, x - y = 1

3. If there is $\sin A = 3/5$, Find the value of the $\cos A$.

4.   A coin is tossed twice. Find the probability of getting a head both times.

5. Find the derivative of the following function:

$$y = x^2 - 4x + 7$$

6.   What is Linear Programming? Write down one of its uses.

7.   Solve the following integrations:

$$\int x^2 dx$$

8.   If A and B Have independent events, So, write down the value. $P(A \cap B)$

9.   crooked and $= x^2$ The gradient (slope) Find out.

10. $\cos 2A$ Write the formula and give one of its uses.

Section D: Long Answer Questions (6×5 = 30 Marks)

1. Solve the following integrations:

$\int x^3 dx$

2. Solve the following linear equations using the matrix method:

$2x + y = 5$

$x - y = 1$

3.   Explain the method of finding the maximum and minimum values and find the maximum/minimum value of the following function:

$$y = x^3 - 3 + 4x^2$$

4.   Two events A and B Prove the sum law of probability for:

$$P(A \cap B) = P(A) + P(B) - P(A \cap B)$$

5.   Solve the questions related to three-dimensional geometry:

Find the distance between two points $(1,2,3)$ and $(4,6,3)$.