

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-4)
MATHEMATICS-II
Subject Code : BC-301
M.Code : 10022

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A**1. Write briefly :**

(a) Define Square matrix.

(b) Find the rank of $\begin{bmatrix} 1 & 2 \\ -4 & -1 \end{bmatrix}$.(c) Find the determinant of $\begin{bmatrix} 2 & 4 \\ 3 & 5 \end{bmatrix}$.

(d) State Measures of Central tendency.

(e) Define Skewness.

(f) Differentiate: $\sin x^2$.(g) Differentiate : $\log \tan x$.(h) Integrate: $x^{3/2}$ (i) Integrate: e^x .

(j) State Trapezoidal Rule.

SECTION-B

2. Solve: $5x + 3y + 7z = 4$; $3x + 26y + 2z = 9$; $7x + 2y + 10z = 5$.
3. Find the missing frequency from the following data when the arithmetic mean is 34 marks and then find the median.

Marks	0–10	10–20	20–30	30–40	40–50	50–60
No. of Student	5	15	20	----	20	10

4. If $A = \begin{bmatrix} 2 & 1 & 0 \\ 3 & 2 & 1 \\ 1 & 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 3 & 4 \\ 0 & 1 & 2 \\ 1 & 0 & 5 \end{bmatrix}$, Find AB and BA .

5. Integrate by parts : $\int x \sin x \, dx$.
6. Find the second derivative of $x^2 \log 3x$.
7. Compute by Simpson's rule an approximate value of $\int_{-3}^3 x^4 \, dx$ by taking seven equidistant ordinates. Compare it with the exact value and the value obtained by using the Trapezoidal rule.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.