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Total No. of Pages : 02

Total No. of Questions : 07

B.Sc.(IT) (2015 & Onwards)/BCA (2013 & Onwards) (Sem.-2)

MATHEMATICS – II

Subject Code : BSIT/BSBC-202

M.Code : 10051

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. Answer the following :

a) Define Symmetric matrix.

b) Find the transpose of $\begin{bmatrix} 1 & 4 \\ -3 & -5 \end{bmatrix}$.

c) Define Invertible Matrix.

d) Define Mean.

e) State measures of dispersion.

f) Define Depreciation.

g) Find the derivative of $e^{\sin x}$.

h) Differentiate : $x^3 + 4x^2 - 3x + 5$.

i) Find $\int \frac{x}{x+1} dx$

j) State Trapezoidal Rule.

SECTION-B

Q2. Test for consistency and solve : $2x - 3y + 7z = 5$, $3x + y - 3z = 13$, $2x + 19y - 47z = 32$.

Q3. Calculate the mean and standard deviation of the following :

Size	6	7	8	9	10	11	12
Frequency	3	6	9	13	8	5	4

Q4. Find the maximum and minimum value of $3x^4 - 2x^3 - 6x^2 + 6x + 1$ in the interval $(0, 2)$.

Q5. Find the second derivative w.r.t. x if $x = a \cos^3 \theta$ & $y = a \sin^3 \theta$.

Q6. Evaluate : $\int_0^{\frac{\pi}{2}} \log \sin x \, dx$.

Q7. Evaluate $\int_0^6 \frac{1}{1+x^2} dx$ by using (i) Trapezoidal rule. (ii) Simpson's 1/3 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.