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Total No. of Pages : 02

Total No. of Questions : 09

BMCI (2014 & Onwards) (Sem.–2) MATHEMATICS – II Subject Code : BMCI-201 Paper ID : [72462]

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 FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

- 1. Write briefly :
 - a) Define rank of the matrix
 - b) Define Median
 - c) Define Upper Triangular Matrix
 - d) Define Standard deviation
 - e) Define singular matrix
 - f) Differentiate : sin x2 w.r.t. x.
 - g) Find the derivative of sin $2x \sin 3x$ w.r.t. x .

h) Evaluate : 🛛 xsinxdx

- i) Find: $\int_{-\infty}^{\infty} \cos 6x dx$
- j) Find: $\begin{bmatrix} 2\\ n \end{bmatrix}$ logsin xdx.

SECTION-B



- 4. An aeroplane flies along the four sides of a square at the speed of 100, 200, 300 and 400 km/hr respectively. What is the average speed of plane in its flight around the square?
- 5. Find the second derivative w.r.t. x if x = a (t + sint), y = a (1 + cost).
- _{6.} Integrate : Dexx2dx.

SECTION-C

- 7. Solve: 5x + 2y + 5z = 23, 4x + 4y + 2z = 19, 3x + 2y + 4z = 18 by Crammer rule.
- 8. A particle moves along the curve $6y = x^2 + 2$. Find the points on the curve at which the y-co-ordinate changes 8 times faster than x-co-ordinate.
- 9. Calculate the mean and standard deviation of following :

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

NOTE : Disclosure of identity by writing mobile number or making passing reque st on any page of Answer sheet will lead to UMC case against the Student.