QP CODE: 24019187

Reg No	:	
Name	:	

# **BBM DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE EXAMINATIONS, MAY 2024**

# Second Semester

**Bachelor of Business Management** 

# Complementary Course - BM2CMT08 - BUSINESS MATHEMATICS II

2017 ADMISSION ONWARDS

EA577D75

Time: 3 Hours

Max. Marks: 80

## Part A

Answer any ten questions.

Each question carries 2 marks.

- 1. Define a Diagonal Matrix.
- Find the determinant value of A =  $\begin{bmatrix} 2 & 3 & 1 \\ 4 & 5 & 4 \\ 2 & 1 & 2 \end{bmatrix}$ 2.
- 3. Define an Inverse of a matrix .
- Find the magnitude of the vector 4i+6j-k. 4.
- Prove that the two vectors a=5i+0j-5k and b=5i+0j+5k are orthogona. 5.
- Define then condition for two vectors are to be parallel, give an example. 6.
- Find  $\frac{d}{dx}(x^2+3ex+4\log x)$ 7.
- Find  $\frac{d}{dx}(\frac{4}{3x-2})$ 8.
- Find  $\int (3e^x + x^2 + 4e^x) dx$ 9
- 10. Evaluate <sup>∫ xe<sup>x</sup></sup> dx
- 11. Find the slope of a line passing through (x1,y1) and (x2,y2).
- 12. Find the point of intersection of the lines 3x + 2y 4 = 0 and x + y 3 = 0.

 $(10 \times 2 = 20)$ 

### Part B

Answer any six questions.

Each question carries 5 marks.



13. Solve the system of equations using matrix inversion metod.

2x + y = 3x - y = 0

14.

Find the rank of a matrix  $\begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 3 & 5 & 1 \\ 2 & 4 & 2 & 2 \end{bmatrix}$ 

15.

- 1. Define unit vector. Give an eample.
- 2. Define null vector.
- 16. Give the condition for two vectors to be perpendicular and check whether the vectors 3ij-k and 5i+5j-5k are perpendicular or not.
- 17. Find  $\lim_{x \to 3} \frac{x^3 27}{x^2 9}$
- 18. Given R=3000- $(3-x)^2$ . When is R maximum? What is maximum value of R
- 19.The demand function of a monopolist is P=15-2x and the cost function is  $C(x)=x^2+2x$ . Find<br/>the (1) Marginal cost (2) marginal revenue (3) average cost(4)average cost when the output is 4 units
- 20. Cost function is given by  $C = a + bx + cx^2$ . Define marginal cost and average cost.
- 21. Find the intercept on the y axis made by the line joining points (-3,5) and (3,9)

(6×5=30)

### Part C

Answer any **two** questions.

Each question carries **15** marks.

25. Find the area of a Quadrilateral formed by the points (-2,3), (1,0), (1,5), (2,4)

(2×15=30)

