

23U329

(Pages: 2)

Name:

Reg.No:

THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION, NOVEMBER 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U BCM3 A11 / CC19U BBA3 A11 - BASIC NUMERICAL METHODS

(Commerce / BBA - Common Course)

(2019 Admission onwards)

Time : 2.5 Hours

Maximum : 80 Marks

Credit : 4

Part A (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. What is transpose of a matrix?
2. Add the following Matrices:
$$\begin{bmatrix} 3 & -5 & 2 \\ -7 & 0 & 8 \\ -2 & 4 & 8 \end{bmatrix} + \begin{bmatrix} -3 & 2 & 7 \\ -8 & -9 & 7 \\ 1 & -1 & 2 \end{bmatrix}$$
3. Find the nth term $2/11, 4/19, 1/4, \dots$
4. Find the number of years in which a sum of money will double itself at 25% pa simple interest.
5. Find the amount that Rs.100 will become after 20 years at compound interest at 5% calculated annually.
6. Find the compound interest for Rs 8000 for 2 years if interest is payable half yearly at 4% p.a.
7. If the 8% interest compounded 4 times in an year. What will be the effective rate?
8. What is the formula used for calculating present value of Annuity?
9. What is future value and the formula used for calculate future value?
10. What is the use of EMI?
11. Why is arithmetic mean considered to be the best average?
12. Find the median 4, 45, 60, 20, 83, 19, 26, 11, 27, 12, 52.
13. How to compute quartile deviation?
14. Difference between Standard deviation and Mean deviation.
15. What is meant by kurtosis? How do you measure kurtosis?

(Ceiling: 25 Marks)

Part B (Paragraph questions)

Answer **all** questions. Each question carries 5 marks.

16. A grocer mixes tea at Rs.40 per kg with tea at Rs.50 per kg to make 30 kg to be sold at Rs.45 per kg. What are the quantities of each kind in the mixture?
17. Solve $2x - y + z = 3$, $x + 3y - 2z = 11$ and $3x - 2y + z = 4$
18. Solve $x^2 - 4x + 3 = 0$
19. Find the value of the determinant of the matrix $A = \begin{bmatrix} 3 & 4 & 2 \\ 0 & 1 & -3 \\ 2 & -2 & 8 \end{bmatrix}$
20. Find the Minor of the Matrix $A = \begin{bmatrix} 1 & 1 & -1 \\ 2 & -3 & 4 \\ 3 & -2 & 3 \end{bmatrix}$
21. Find the Rank of Matrix $A = \begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}$
22. Solving of simultaneous equations with the help of Matrices
 $2x - 3y = 3$
 $4x - y = 11$
23. If the 9th term of an AP is 99 and 99th term is 9 find 108th term.

(Ceiling: 35 Marks)

Part C (Essay questions)

Answer any **two** questions. Each question carries 10 marks.

24. Solve $6x - y = 15$ and $10x - 11y = 18$
Solve $4x + 5y = 5x + 9$ and $3x = 3y + 5x - 2$
Solve $4x + 2y = 10$ and $5x + y = 8$
25. How many terms of the series $-10, -6, 0, \dots$ must be taken so that the sum be 132 ?
26. The following are the daily wages in rupees of 20 employees of a firm 130, 62, 145, 118, 125, 76, 151, 142, 110, 98, 65, 116, 100, 103, 71, 85, 80, 122, 132, 95. The firm gives bonus of rupees 10, 15, 20, 25 and 30 for individuals in the respective wage groups exceeding Rs. 60 but not exceeding Rs. 80, Exceeding Rs. 80 but not exceeding Rs. 100 and so on upto exceeding Rs. 140 but not exceeding Rs. 160. Find the average bonus paid per employee.
27. Weight of 50 college students are given below. Find mode.
- | | | | | | |
|----------------|---------|-------|-------|-------|-------|
| Weight (kg) | : 60-64 | 65-69 | 70-74 | 75-79 | 80-84 |
| No of students | : 5 | 9 | 16 | 12 | 8 |

(2 × 10 = 20 Marks)
