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Name.....

Reg. No.....

THIRD SEMESTER (CBCSS-UG) DEGREE EXAMINATION, NOVEMBER 2024

(B.Com/BBA)

Common Course — A11—BASIC NUMERICAL METHODS

(2019—2023 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*All questions can be attended.**Each questions carries 2 marks.*

1. Define Statistics.
2. What is meant by Triangular matrix ?
3. What is a linear equation ?
4. What is meant by annuity ?
5. What is a Quadratic equation ?
6. What do you mean by discrete and continuous series ?
7. What do you mean by Standard Deviation ?
8. Find compound interest on Rs. 25,200 for 2 years at 10 % p.a. compounded annually.
9. What do you mean by a sequence ?
10. What is weighted arithmetic mean ?
11. What is meant by Positive and Negative skewness ?
12. Complete the pattern : 1, 9, 17, 25, 33, ———.
13. Calculate the range and coefficient of range from the following data :
4, 7, 8, 46, 53, 77, 8, 1, 5, 13.
14. Calculate median : 25, 35, 15, 18, 17, 36, 28, 24, 22, 26.
15. What do you mean by the time value of money ?

(15 × 2 = 30 marks)

Max. Ceiling : 25 marks

Section B*All questions can be attended.**Each questions carries 5 marks.*

16. Find the value of standard deviation and coefficient of variation from the following :

Variables	:	10	20	30	40	50	60	70
Frequency	:	6	8	16	15	32	11	12

Turn over

17. A sum of Rs. 1,750 is divided into two parts such that the interests on the first part at 8 % simple interest per annum and that on the other part at 6 % simple interest per annum are equal. What is the interest accumulated on each part ?
18. List out the merits and demerits of Standard deviation.
19. If the Harmonic mean between $x + 1$ and 5 is 3, find x .
20. What do you mean by compound interest ? How is it different from simple interest ?
21. If the first, second and last terms of the AP are 5, 9 and 101 respectively, find the total number of terms in the AP.
22. Solve $4(x - 2) + 5(x - 3) - 25 = x + 8$.
23. If $3A - B = \begin{bmatrix} 5 & 0 \\ 1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 3 \\ 2 & 5 \end{bmatrix}$ then find the value of matrix A.

(8 × 5 = 40 marks)
Max. Ceiling : 35 marks

Section C

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

24. What do you mean by sequence and series ? List out the differences between Sequence and Series. What are the types of sequene and series ?
25. Solve the following system of equations by using Cramer's rule :

$$\begin{aligned} 2x + y - z &= 0 \\ x - y + z &= 0 \\ x + 2y + z &= 3. \end{aligned}$$

26. Find the mean, median and mode of the following data :—

Classes	:	0—20	20—40	40—60	60—80	80—100	100—120	120—140
Frequency	:	24	32	40	48	24	20	12

27. Solve :

$$\frac{7x+1}{7x+5} = \frac{3x-1}{5x-1}.$$

(2 × 10 = 20 marks)