

D 11958

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Name.....

Reg. No.....

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2021**

Common Course (B.Com./B.B.A.)

A11—BASIC NUMERICAL METHODS

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

**Section A***Answer at least **ten** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 30.*

1. What do you mean by time value of money ?
2. What is conversion period ?
3. What is co-efficient of variation ?
4. What is assumed mean method ?
5. What is positive skewness ?
6. What do you mean by mode ?
7. What is geometric progression ?
8. What you mean by kurtosis ?
9. Find the 10<sup>th</sup> term of the series : 11, 15, 19, 23,.....
10. In how many years will a sum of Rs. 4,000 yield a simple interest of Rs. 1,440 at 12 % per annum ?
11. Calculate mean : 11, 4, 6, 6, 8, 9, 3
12. What is co-efficient of range ?
13. What is quartile deviation ?

**Turn over**

14. Write down the formulae for calculating median from discrete and continuous data ?
15. What do you mean by a system of linear equations ?

(10 × 3 = 30 marks)

### Section B

*Answer at least five questions.*

*Each question carries 6 marks.*

*All questions can be attended.*

*Overall Ceiling 30.*

16. The arithmetic mean between two numbers is 75 and their geometric mean is 21. Find the numbers.
17. Find the range and coefficient of range of the following data :
- 43.5, 13.6, 18.9, 38.4, 61.4, 29.8
18. What do you mean by compound interest ? How it is different from simple interest ?
19. If Karl Pearson's co-efficient of skewness is 0.21, mean is 43 and median is 40, find the co-efficient of variation.
20. Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14 % p.a. and 11 % p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B ?
21. Mr. Ajmal took a personal loan of Rs. 3,00,000. He is asked to repay the loan in 4 years and rate of interest is 9 % p.a. Calculate EMI amount.
22. Solve the system of equations :
- $2x + 3y = 8$ ,  $3x + 5y = 10$ .
23. Find the mean deviation and co-efficient of mean deviation of 3, 6, 6, 7, 8, 11, 15, 16

(5 × 6 = 30 marks)

### Section C

*Answer any two questions.*

*Each question carries 10 marks.*

24. What are the requisites of a good average ? List out the merits and demerits of arithmetic mean. Explain the empirical relation between mean, median and mode with a suitable example.

25. If  $A = \begin{pmatrix} -3 & 1 \\ -2 & 4 \\ 5 & -1 \end{pmatrix}$  and  $B = \begin{pmatrix} 4 & -3 \\ 0 & -2 \\ -2 & 4 \end{pmatrix}$ , then what is  $3A - 2B$  ?

26. Solve the following system of equations by using Cramer's rule :

$$2x + y - 2z = -1, \quad 3x - 3y - z = 5, \quad x - 2y + 3z = 6.$$

27. The following data gives the number of vehicles sold by a major Toyota Showroom in a day was recorded for 10 working days. Find the inter quartile range, quartile deviation and its co-efficient :

Day	:	1	2	3	4	5	6	7	8	9	10
Frequency	:	20	15	18	5	10	17	21	19	25	28

(2 × 10 = 20 marks)