THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION, NOVEMBER 2020

B.Com./B.B.A.

A 11—BASIC NUMERICAL METHODS

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 is a matrix ?

2. What is compound interest ?

3. What is a linear equation ?

4. What do you mean by a sequence?

5. What is EMI ?

6. What do you mean by deferred perpetuity?

7. What do you mean by dispersion ?

8. What do you mean by singular and non-singular matrix?

9. Define Arithmetic Mean.

10. What do you mean by continuous series ?

11. What is negative skewness ?

12. Find next number in the sequence 1, 4, 9, 16, 25, x.

13. What is range ?

14. What do you mean by standard deviation ?

15. What is Geometric Mean ?

$(10 \times 3 = 30$ ma

Turn

Section B

*Answer at least **five** questions.*
Each question carries 6 marks.
All questions can be attended.
Overall Ceiling 30.

16. Solve $4(x-1)+1 = 5(2x+1)-6$.

17. What is $\begin{bmatrix} 2 & -3 \\ -4 & 2 \end{bmatrix} - \begin{bmatrix} -1 & -5 \\ 3 & -2 \end{bmatrix}$?

18. At what rate percent per annum will a sum of money double in 8 years ?

19. Find out the median from the following data :

Age	10	5	7	12	8
No. of Students	15	20	15	28	12

20. Find two natural numbers whose sum is 27 and product is 182.

21. The first term of an Arithmetic Progression is 15 and the last term is 85. If the sum of all terms is 750, what is the 6th term ?

22. What is mean deviation ? What are its merits and limitations ?

23. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1,600 each on 1st January and 1st July of a year. Calculate the amount he would have gained by way of interest at the end of the year.

(5 × 6 = 30 marks)

Section C

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

24. What are the major measures of central tendency ? List out the merits and limitations of each measures.

25. A man constructed his house by taking a home loan of Rs. 15,00,000. He is asked to repay the loan in 5 years and rate of interest is 13% p.a. Calculate EMI.

26. Find a solution to the following system by using Cramer's rule :

$x - 2y + 3z = 9, -x + 3y - z = -6, 2x - 5y + 5z = 17$.

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

Wages	0–50	50–100	100–150	150–200	200–250	250–300	300–350
No. of Employees	2	3	5	6	5	3	1

(2 × 10 = 20 marks)