D 31753 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION

NOVEMBER 2022

Common Course for B.Sc. L.R.P. (Alternate Pattern)

A 11—BASIC NUMERICAL METHODS

(2019 Admission onwards)

Time : Two Hours and a Half Maximum : 80 Marks

Part A

Answer **all** *questions.*

1. What is equation ?
2. What is meant by discriminant of the quadratic equation ?
3. What is square matrix ?
4. What do you mean by Symmetric matrix ?
5. What is determinant ?
6. What do you mean by Arithmetic Progression ?
7. What is sequence ?
8. What is compound interest ?
9. What is meant by perpetuity ?
10. What do you mean by statistical average ?
11. What is meant by mode ?
12. State any two demerits of median.
13. Define mean deviation.
14. State any two advantages of standard deviation.
15. What is skewness ?

(15 × 2 = 30, Maximum Ceiling 25 marks)

Part B

Answer **all** *questions.*

16. Solve $13x + 25 - 4x - 38 = 45 + x - 18$.
17. Solve the equation $2x^2 + 3x - 65 = 0$.

Turn over

18. Find the determinant of $A = \begin{bmatrix} 2 & 4 & 3 \\ 4 & 0 & 7 \\ 8 & 5 & 2 \end{bmatrix}$.

19. Find the 8th term of Arithmetic progression : 2, 5, 8.....

20. Find the sum of first 10 terms of geometric progression 6, 18, 54.....

21. Calculate simple interest and amount at end of the 6th year for Rs. 10,000 at 8% per annum.

22. Calculate Arithmetic mean from the following data :

Values	:	5	15	25	35	45	55	65	75
Frequency	:	2	3	5	7	6	4	3	1

23. Find median of the values 5, 1, 3, 8, 16, 67, 9, 11

(8 × 5 = 40, Maximum Ceiling 35 marks)

Part C

Answer any **two** *questions.*

24. Solve the following equations by using matrix

$4x + 2y = 14$
$2x + 3y = 13$

25. Find compound interest for Rs. 25,000 for 5 years if interest is payable annually at 7% p.a.

26. Find the 10th term and 15th term of the geometric progression 3, 6, 12.....

27. Calculate Standard Deviation and Coefficient of variation from the following data :

Marks	:	0-10	10-20	20-30	30-40	40-50
Frequency	:	1	3	5	7	9

(2 × 10 = 20 marks)