D 31755 (Pages : 3) 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 SKILLS

(2019 Admission onwards)

Time : Two Hours and a Halrf Maximum : 80 Marks

Section A (Short Answers)

Answer **all** *questions.*
Each question carries 2 *marks.*
Ceiling marks for Section A is 25.

1. State DeMorgan ' s law.
2. What is a Pie diagram ?
3. Represent the following frequency table by histogram :

Marks	:	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35
Number of students	:	5	20	50	40	10

4. Explain Kurtosis.
5. What is a power set ?
6. Find the median of the following data :

   4, 45, 60, 20, 83, 19, 26, 11, 27, 12, 52

7. If the sum of 12^{th} and 22^{nd} terms of an AP is 100, find the sum of first 33 terms.
8. Solve $x^2 - 3x - 4 = 0$ by using quadratic formula.
9. Find the value of x in the equation $2x + 5/x = 7$.
10. What is an Index Number ?
11. Differentiate between discrete and continuous frequency distributions.
12. The sum of three numbers in AP is – 3 and their product is 8. Find the numbers.

Turn over

13. Find the product of first 9 terms of GP, if the 5th term is 2.

14. What is analysis of time series ?

15. Find the value of the determinant $\begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix}$.

Section B (Paragraphs)

Answer **all** *questions.*
Each question carries 5 *marks.*
Ceiling of marks for Section B *is* 35.

16. If A = {1, 2, 3} and B = {a, b, c}, find A × B and B × A. Are they equal ?

17. What are the different aspects to be considered in planning a statistical enquiry ?

18. Find n, if the sum 24 + 20 + 16 + ... to n terms is 72.

19. Find the adjoint of the matrix $\begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$.

20. Solve the equation $x + \sqrt{x} = 6/25$.

21. Find the central tendencies for given series :

1, 11, 9, 15, 7, 11, 12, 14

22. Find AB, where $A = \begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 1 \\ 3 & 2 \end{bmatrix}$.

23. Give three yearly moving averages for the following series :

Year	:	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Production (lakh tons)	:	10.2	11.3	10.7	10.9	11.2	12.3	12.1	13.2	13.3	13.9

Section C (Essays)

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

24. Find the inverse of the matrix $\begin{bmatrix} 1 & 1 & 2 \\ 0 & 1 & 3 \\ 0 & 0 & 1 \end{bmatrix}$.

25. Find the sum of the series 6 + 66 + 666 + 6666 + ...

26. Find the quartile deviation for the following data :

Marks	*Frequency*
20 - 30	4
30 - 40	12
40 - 50	18
50 - 60	28
60 - 70	19
70 - 80	14
80 - 90	5

27. Explain the scope and limitations of statistics.

(2 × 10 = 20 marks)