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Name: ..... Reg. No: .....

# THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

## (CBCSS - UG)

(Regular/Supplementary/Improvement)

## CC19U FTL3 A11B - BASIC NUMERICAL SKILLS

(Food Technology - Common Course)

(2019 Admission onwards)

Time: 2.5 Hours

## Maximum: 80 Marks Credit: 4

#### **Part A** (Short answer questions) Answer *all* questions. Each question carries 2 marks.

- 1. Define power set.
- 2. What are the symbols used in Venn Diagram?
- 3. Find the value of the determinant of the matrix B.

$$B = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 0 & 1 \end{bmatrix}$$

- 4. Solve 5x + 7x = 72
- 5. Write the general form of second degree polynomial.
- 6. Write profit function.
- 7. For the following AP Write the first term and the common difference (i) -5, -1, 3, 7, .... (ii) .6, 1.7, 2.8, 3.9, ....
- 8. Define geometric mean
- 9. Find the total interest and amount at the end of 5 years for Rs. 5000 at 10 % p.a, simple interest.
- 10. Define sampling error.
- 11. What is bar diagram?
- 12. What is less than ogive? Give an example.
- 13. Write any two demerits of harmonic mean.
- 14. Difference between Standard deviation and Mean deviation.
- 15. What is Skewness?

### (Ceiling: 25 Marks)

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. Solving of simultaneous equations with the help of matrices (Crammer's Rule)

2X + 3Y = 1

- 3X + Y = 5
- 17. What are the factors of (i)  $6x^2 2x = 0$ ? (ii) What are the factors of  $2x^2 + 7x + 3$ ?
- 18. Find three numbers in A.P whose sum is 9 and the product is -165.

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- 19. If the 5<sup>th</sup> and the 10<sup>th</sup> terms of a GP are 32 and 1024 respectively. Find the following (i) First term (ii) Common ratio (iii) 7th term
- 20. Explain Classification of data.

21. Find mode.	Marks	:	5-10	10-15	15-20	20-25	25-30
	No of students	:	2	3	5	4	1

22. Calculate mean deviation for the following data.

0-10	5
10-20	8
20-30	15
30-40	16
40-50	6

23. Calculate coefficient of skewness from the following data.

Value :	6	12	18	24	30	36	42
F :	4	7	9	18	15	10	5

(Ceiling: 35 Marks)

Part C (Essay questions)

Answer any two questions. Each question carries 10 marks.

24. Find the Inverse of Matrix  $A = \begin{bmatrix} 3 & -2 & 3 \\ 2 & 1 & -1 \\ 4 & -3 & 2 \end{bmatrix}$ 

25. Find solutions.

3x - 9z = 33

7x - 4y - z = -15

4x + 6y + 5z = -6

26. Consider the AP 9, 17, 25, .....

(i) Find common difference

(ii) Find 10<sup>th</sup> term

(iii) Find n<sup>th</sup> term

(iv) How many terms must be taken to give a sum of 636?

27. From the following data construct index numbers of price applying.

(i) Laspeyre's Index number

(ii) Paasche's Index Number

(iii) Fisher's Index Number

(iv) Dorbish and Bowley's method

Commodity	Pri	ices	Quantities		
Commodity	2000	2001	2000	2001	
А	10	12	20	22	
В	8	8	16	18	
С	5	6	10	11	
D	4	4	7	8	