20U350 (Pages: 2) Name: .....

Reg. No: .....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

(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 Null set and Singleton Set.
2. What is Ordered Pair?
3. What is transpose of a matrix?
4. Solve $7(X-2)+8\,(X-3)-22=X+10$
5. Solve $4x^2-12x+9=0$ by completing square method.
6. Write profit function.
7. Give the equation for finding n^{th} term of GP.
8. Define geometric mean.
9. Give the equations for mean, median and mode for discrete data.
10. Give any 4 functions of statistics.
11. What is the difference between Primary data and secondary data?
12. What is frequency distribution?
13. A man spends Rs.675 per month for the first 4 months and Rs.800 per month for the next 8 months and save Rs.4100 a year. What is the average monthly income?
14. What are the uses of range?
15. State the positions of mean, median and mode in positively skewed and negatively skewed distribution.

(Ceiling: 25 Marks)

Part B (Paragraph questions)

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

16. Find $A^2-4A-5I$

$$A=\begin{bmatrix}1 & 2 & 2\\ 2 & 1 & 2\\ 2 & 2 & 1\end{bmatrix}$$

17. Solve by Quadratic formula $2x^2+8x+8=0$
18. Which term of the series 93, 90, 87, … is zero?
19. Insert 4 arithmetic means between 5 and 20.

20. Draw a histogram for the following distribution relating to the marks secures by the students of the class in accountancy

Marks	:	0-5	5-10	10-15	15-20	20-25	25-30	30-35
No. of students	:	5	15	25	50	40	30	20

21. Find median.

Marks	:	0-30	30-50	50-80	80-100
No of students	:	20	30	40	10

22. Calculate mean deviation for the following data.

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

23. Define components of Time Series.

(Ceiling: 35 Marks)

Part C (Essay questions)

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

24. Solve the simultaneous equations with the help of matrices.

$$5X - 6Y + 4Z = 15$$
$$7X + 4Y - 3Z = 19$$
$$2X + Y + 6Z = 46$$

25. Find the inverse the matrix A and verify that $A.A^{-1} = I$

$$A = \begin{bmatrix} 1 & 0 & 1 \\ 2 & 3 & 5 \\ 6 & 4 & 3 \end{bmatrix}$$

26. The sum of first 11 terms of an AP is 19 and the sum of first 19 terms is 11.

(i) Find a (ii) Find d (iii) Find 30th term (iv) Find sum of the first 30 terms

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	Prices		Quantities	
	2000	2001	2000	2001
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

(2 × 10 = 20 Marks)

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