THIRD SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2024
(Food Processing and Technology - Common Course)
CC18U GEC3 NS08 – BASIC NUMERICAL SKILL
(2018 to 2020 Admissions – Supplementary)

Time: Three Hours   Maximum: 80 Marks

Part A
Answer *all* questions. Each question carries 1 mark.

1. If A is a matrix of order 4x3 and b is a matrix of order 3x5 then the order of its product will be ------------

2. If Mean = Median = Mode the distribution is ------------

3. Co-efficient of Range is ------------

4. The quadratic equation of a $x^2 + bx + c = 0$ has equal roots if $b^2 – 4ac$ ------------

5. The point whose co-ordinate is (-1, 1) lies in – quadrant.

6. The transpose of the matrix $\begin{bmatrix} 5 & 0 \\ -1 & 5 \end{bmatrix}$ is ------------

7. The sets of {MARCH} and {CHARM} are ------------ sets.

8. When the measure of kurtosis is less than 3, the distribution is ------------

9. For a distribution mean = 20, mode=25, S.D = 10, then coefficient of skewness is ------------

10. ------------ is an ideal measure of dispersion.

(10 × 1 = 10 Marks)

Part B
Answer any *eight* questions. Each question carries 2 marks.

11. What are the characteristics of Index number?

12. Find mode when mean is 30 and median is 32.

13. Solve the equation by factoring: $x^2 - 5x + 6$

14. If $A = \{1,2,3,4,5,6\}$ $B = \{2,4,6,8\}$ find A ∪ B and A ∩ B.

15. What is histogram?

16. If A = $\begin{bmatrix} 2 & -1 \\ 0 & 3 \end{bmatrix}$ and B = $\begin{bmatrix} 7 & 0 \\ -2 & -3 \end{bmatrix}$ write down A+B.

17. Distinguish between Simple and Compound interest.

18. Given below the monthly income of 10 families. Calculate the mean.

1600, 1560, 1440, 1530, 1670, 1860, 1750, 1910, 1490, 1800

19. Find the determinant of the matrix $\begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}$

20. What is a sample?

21. What are the limitations of statistics?

22. What is a schedule?

(8 × 2 = 16 Marks)

Part C
Answer any *six* questions. Each question carries 4 marks.

23. Write a brief note on various components of time series.

24. Calculate Median from the following data:

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	5	15	30	8	2

25. Solve the system of equations with the help of Matrices.

$x + y + z = 7$

$x + 2y + 3z = 16$

$x + 3y + 4z = 22$

26. Define statistics. Explain its characteristics.

27. From the following draw a Multiple Bar Diagram.

Year	Production (in units)		
	A	B	C
2008	45	55	65
2009	35	60	70
2010	50	70	80
2011	55	80	60

28. If the 5th term and 12th term of an Arithmetic Progression are 30 and 65 respectively, find the sum of its 26 terms.

29. Explain the difference between primary data and secondary data.

30. Find simple interest on 3000 at 7% rate of interest for one year

31. Find the determinant of $\begin{bmatrix} 2 & 5 & 8 \\ 1 & 5 & 2 \\ 3 & 5 & 4 \end{bmatrix}$.

(6 × 4 = 24 Marks)

Part D
Answer any *two* questions. Each question carries 15 marks.

32. Draw two Ogives for the following data.

Marks	10-19	20-29	30-39	40-49	50-59
No. Of students	5	10	18	12	5

33. Calculate Karl Pearson's coefficient of skewness the following data:

Marks	0-20	20-40	40-60	60-80	80-100
Frequency	10	20	20	15	5

34. Discuss the methods for measuring trend.

35. Using the following data calculate Laspayre's, Paasche's and Fisher's Ideal Index Number.

Commodity	2017		2018	
	Quantity	Price	Quantity	Price
A	10	60	14	65
B	18	105	20	100
C	30	70	35	80
D	50	10	45	12
E	63	38	70	50

(2 × 15 = 30 Marks)

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