

23U349

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Name:

Reg.No:

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U BSH3 A11 / CC20U BSH3 A11 - BASIC NUMERICAL METHODS

(Hotel Management and Catering Science - 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. Solve $(2x + 5)(3x + 4) + 1 = 0$
2. Solve $x^2 - 4x + 3 = 0$, using quadratic formula.
3. What is scalar matrix?
4. Define rank of a matrix.
5. Find the 14th tem of the series $13 + 17 + 21 + 25 + \dots$
6. Find the Arithmetic mean between 200 and 500.
7. What is the difference between simple and compound interest ?
8. What you mean by nominal interest rate ?
9. Define 'present value' of a future sum.
10. Define perpetuity.
11. Define Equated Monthly Instalment (EMI).
12. What is median?
13. What are the demerits of mode?
14. What are the merits of Mean Deviaton?
15. What are positive and negative skewness?

(Ceiling: 25 Marks)

Part B (Paragraph questions)

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

16. Solve $x + y = 1$
 $y + z = 1$
 $z + x = 4$

17. Find the determinant of the matrix

$$B = \begin{bmatrix} 1 & 2 & 0 \\ 0 & 5 & 3 \\ 7 & 0 & 1 \end{bmatrix}$$

18. Find AB and BA if $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 2 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 3 \\ 4 & 5 \\ 2 & 1 \end{bmatrix}$

19. Which term of the sequence $1, 2, 4, 8, \dots$ is 256?

20. Insert 5 geometric means between 2 and 1458.

21. What is the rate percent per annum if a sum double itself in 17 years at compound interest?

22. Find arithmetic mean.

Age	:	13	14	15	16	17
No of students	:	2	5	13	7	3

23. Find quartile deviation

Age	:	5	8	10	12	19	20	32
No of persons	:	3	10	15	20	8	7	6

(Ceiling: 35 Marks)

Part C (Essay questions)

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

24. Solve by using crammer's rule $3x + 2y + z = 6, 2x - 3y + 3z = 2, x + y + z = 3$

25. *i*) The 13th term of an *A. P.* is 3 and the sum of first 13 terms is 234. Find the first term.

ii) How many terms of the series $9 + 12 + 15 + \dots$, must be taken so taht the sum may be 306?

26. The sum of three numbers in *A. P.* is 15. If 1, 3, 9 are added to then respectively, the resulting numbers are in *G. P.*. Find the numbers.

27. Find the standard deviation from the following data. Also find variance and coefficient of variation

Size	:	0-2	2-4	4-6	6-8	8-10	10-12
Frequency	:	2	4	6	4	2	6

(2 × 10 = 20 Marks)
