

21U342

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Name:

Reg.No:

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U BSH3 A11 / CC20U BSH3 A11 - BASIC NUMERICAL METHODS

(Catering Science and Hotel Management - 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 $x^2 - 6x + 8 = 0$ using factorization method.
2. Solve $y^2 - y = 7$, using quadratic formula.
3. What is column matrix?
4. Find $6A$ if $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$
5. Find the Arithmetic mean between -3 and 9.
6. Find n^{th} term of the sequence 2, 6, 18, 54, ...
7. Find the sum of the series $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$ to 12 terms.
8. Find the sum at the end of 4 years for Rs.10,000 at 10% per annum, compound interest.
9. What effective rate would you get if the advertisement says "6% compounded monthly" ?
10. Calculate the present value of Rs.50000 to be received after 5 years, provided the interest rate is 9%.
11. What is the formula for calculating E.M.I.?
12. Calculate arithmetic mean of the auto fares of 10 journeys Rs. 10, 90, 85, 103, 11, 29, 84, 15, 35, 80.
13. Find the mode of 50, 15, 12, 20, 50, 18, 16, 25, 30, 40, 35, 50.
14. What is coefficient of range?
15. What are positive and negative skewness?

(Ceiling: 25 Marks)

Part B (Paragraph questions)

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

16. A is six times as old as B. Fifteen years hence A will be three times old as B. Find the ages of A and B.
17. Find the determinant of $B = \begin{bmatrix} 5 & 2 & 3 \\ 2 & 1 & 3 \\ 1 & 3 & 2 \end{bmatrix}$
18. Find the rank of the matrix $A = \begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}$
19. Find the 8^{th} and n^{th} term of the sequence $6, 5\frac{1}{2}, 5, 4\frac{1}{2}, 4, \dots$
20. Insert 5 geometric means between 2 and 1458.
21. A person receives an annuity of RS.5000 for 4 years. If the rate of interest is 10%, calculate the present value of the annuity.
22. Find the mean deviation from the mean and its coefficient for the following values 25, 63, 85, 75, 62, 70, 83, 28, 30, 12
23. Find quartile deviation and inter quartile range.

Age	:	0-20	20-40	40-60	60-80	80-100
No of persons	:	4	10	15	20	11

(Ceiling: 35 Marks)

Part C (Essay questions)

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

24. Solve by using crammer's rule $5x - 6y + 4z = 15, 7x + 4y - 3z = 19, 2x + y + 6z = 46$
25. Find the sum of the series $1 + 3 - 5 + 7 + 9 - 11 + 13 + 15 - 17 + \dots$ to $3n$ terms.
26. (i) Find the number of years a sum of Rs.2500 will take to become Rs.3025, if the rate of interest is 7% per annum, simple interest.
(ii) Find the total interest and amount at the end of 4^{th} year for Rs.7000 at 6.5% per annum, simple interest.
27. Calculate the median.

Group	60-65	65-70	70-75	75-80	80-85	85-90
f	1	5	9	12	7	2

(2 × 10 = 20 Marks)
