20U329 (Pages: 2) Name: .....

Reg.No: .....

THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U BCM3 A11/CC19U BBA3 A11 - BASIC NUMERICAL METHODS

(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 $10 - 5x = 3(x - 4) - 2(x + 7)$.
2. Solve $x^2 - 6x + 8 = 0$ using factorization method.
3. Find the transpose of $B = \begin{bmatrix} 5 & 7 & 2 \\ 2 & 3 & 1 \\ 4 & 6 & 2 \end{bmatrix}$
4. Find $6A$ if $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$
5. Find the 14^{th} tem of the series $13 + 17 + 21 + 25 + \ldots$
6. Find the Arithmetic mean between 7 and 16.
7. Find the Geometric meam between 5 and 20.
8. What is the difference between simple and compound interest?
9. Suppose a bank loans a person Rs.200,000 to purchase a house, at a rate of 3% per annum. If the inflation rate is 2%, what is the real rate of interest ?
10. Rs.100 to be paid one year from now, where the expected rate of return is 5% per year, what worth in today's money ?
11. Define Equated Monthly Instalment (EMI).
12. What are the types of averages?
13. What is quartile deviation?
14. What is Standard Deviation?
15. What is skewness?

(Ceiling: 25 Marks)

Part B (Paragraph questions)

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

16. Find the equilibrium price and quantity exchanged at the equilibrium price, if supply and demant functions are given by S=20 + 3P and D= 160 - 2P, where P is the price charged.

17. Explain row matrix, column matrix, square matrix, rectangular matrix and diagonal matrix with suitable examples.

18. Find the rank of the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 6 & 9 \\ 2 & 4 & 6 \end{bmatrix}$

19. The 3^{rd} term of a $G.P.$ is 18 and the 7^{th} term is 1458. Find the $G.P.$ and its 9^{th} term.

20. Find the sum of n terms of the series $6 + 66 + 666 + 6666 + \ldots$

21. A divident stream commencing once year hence at Rs.66 is expected to grow at 10% annum for 15 years and then ceases. If the discount rate is 21%, what is the present value of the expected series?

22. Compute median.

Size :	1	2	3	4	5	6	7	8
f :	18	16	14	11	13	10	9	20

23. Find the mean deviation from the mean and its coefficient for the following values 25, 63, 85, 75, 62, 70, 83, 28, 30, 12

(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 all natural numbers from 1 to 200 excluding those divisible by 5.

26. (i) What sum will amounts to Rs.1000 in 2 years at 5% per annum, compound interest, payable half - yearly ?

    (ii) Find the compound interest on Rs.8000 for 4 years if interest is payable half-yearly for the first 3 years at the rate of 8% per annum and for the fourth year, the interest is payable quarterly at the rate of 8% per annum.

27. Calculate mode.

Size :	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
f :	4	8	18	30	20	10	5	2

(2 × 10 = 20 Marks)

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