

TB245327C

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S.S) EXAMINATION, FEBRUARY 2024

2021 ADMISSIONS SUPPLEMENTARY

SEMESTER V - CORE COURSE (ECONOMICS)

EC5B08B18 - Quantitative Techniques for Economic Analysis

Time : 3 Hours

Maximum Marks : 80

Part A

I. Answer any Ten questions. Each question carries 2 marks

(10x2=20)

1. What is a quadratic function?
2. Define prime numbers.
3. What is a discrete variable?
4. Explain row matrix with example.
5. Define diagonal matrix.
6. Find $\lim_{x \rightarrow 0} (4x^2 - 5 + 3)$
7. Find $\lim_{x \rightarrow 2} x^5 + 7$
8. What do you mean by Discrete Variable and Continuous variable?
9. Define Frequency Polygon.
10. Give the formula for finding a) Arithmetic Mean b) Median c) Mode in individual series
11. Define Mode.
12. Find mode: 23, 35, 28, 42, 62, 53, 35, 28, 42, 35, 23, 42, 35 .



Part B

II. Answer any Six questions. Each question carries 5 marks

(6x5=30)

13. Find the equilibrium price for a commodity whose supply and demand are given by $Q_s = -9 + p$ and $Q_d = -3 - p$
14. What are the properties of set of integers?
15. If $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ -1 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 2 & -1 \\ 1 & 3 & 4 \\ 0 & -2 & -3 \end{bmatrix}$ find AB .
16. Find the determinant value, Adjoint matrix, and inverse of the matrix $A = \begin{bmatrix} 5 & 3 \\ 2 & 1 \end{bmatrix}$
17. Find the differential coefficient of $(2x-1)^2$
18. Find out the derivate of i) x^{-7} ii) x^5
19. Which are the different types of classification?
20. Explain the method of constructing Lorenz curve. State its uses and limitations.

21. Find the first four central moments for the values given below:
8, 10, 12, 7, 18

Part C

III. Answer any Two questions. Each question carries 15 marks

(2x15=30)

22. An automatic spare part manufacturing company introduces a production bonus to the employees that increase the cost of the spare part. The daily cost of production C for x number of spare parts is given by $C(x) = \text{Rs. } 2.05x + \text{Rs}550$. (i) If the spare parts is sold for Rs 3, determine the minimum number that must be produced and sold daily to ensure no loss. (ii) If the selling price is increased by 30ps. per piece, what would be the break even point? (iii) It is known that at least 500 parts can be sold daily, what price the company should charge per piece of spare part to guarantee no loss.
23. If the cost function is $C(x) = 4x + 6$ and the revenue function is $R(x) = 9x - x^2$ find (i) marginal cost (ii) marginal revenue (iii) break even point
24. Describe the different methods of collecting data indicating the merits and demerits of each of them.
25. What is meant by ogive or cumulative frequency curve? From the following distribution construct the 'less than' ogive:

Capital (in lakh)	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Number of Companies	2	3	7	11	15	7	23

