TB255830V

Reg. No :.....

Name :.....

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

2022 ADMISSIONS REGULAR

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 an exponential function?
2. What is rational number?
3. Define constant.
4. Explain row matrix with example.
5. Define diagonal matrix.
6. What is the quotient rule of differentiation?
7. Find $\lim_{x \to 3} \left(\frac{-2x3 + 15}{4x+1} \right)$
8. Define Tabulation of Data.
9. Draw a frequency curve to the following frequency distribution.

Marks	10-20	20-30	30-40	40-50	50-60	60-70
No.of Students	5	8	15	20	12	7

10. What does a Kurtosis indicate?
11. Find the arithmetic mean of the following values using direct method: 45,48,50,52,55,58,60,61,63,65
12. What are positive and negative skewness

Part B

II. Answer any Six questions. Each question carries 5 marks **(6x5=30)**

13. Calculate the net present value for an investment project worth Rs. 1,00,000. The net cash flow for the other respective year is Year one: Rs. 55,000, Year two: Rs. 80,000 and Year three: Rs. 15,000. The capital cost is 10%.
14. Find the equilibrium price for a commodity whose supply and demand are given by Qs = -9 + p and Qd = -3 - p
15. If $A=\begin{bmatrix} 2 & 3 & 1 \\ 0 & -1 & 5 \end{bmatrix}$, $B=\begin{bmatrix} 1 & 2 & -1 \\ 0 & -1 & 3 \end{bmatrix}$ find 2A - 3B .
16. If $A=\begin{bmatrix} 2 & 3 & 5 \\ 5 & 4 & 2 \\ 2 & 5 & 9 \end{bmatrix}$ $B=\begin{bmatrix} 5 & -9 & 6 \\ 2 & 3 & -5 \\ 4 & -9 & 7 \end{bmatrix}$ find i) A+ B ii) A - B
17. Write down the derivatives of i) x^4 ii) x^{-3}
18. Find the differential coefficient of $x^2 (1+x^3)$
19. Which are the different types of classification?
20. Find Median from the following

Wages	10	12	15	18	20	25	30
No.of Workers	3	5	8	12	13	12	7

21. For the following data calculate Standard Deviation

Marks	2	4	6	8	10
No.of students	8	10	16	9	7

Part C

III. Answer any Two questions. Each question carries 15 marks **(2x15=30)**

22. A company sells x tins of chocolate powder each day at Rs15 /tin. The cost of manufacturing and selling these tins is Rs.10 per tin plus a fixed daily overhead cost of Rs. 1000. Determine (1) Cost function (2) Revenue function (3) Profit function . What are the total cost , total revenue and total profit when 500 tins are manufactured and sold a day?

23. Differentiate with respect to x (i) $x^2 -3x+2$ (ii) $4x^2-9x-3$

24. Draw the two ogives for the following data and estimate the median value

Marks	0-20	20-40	40-60	60-80	80-100
No.of students	5	10	18	12	5

25. What is frequency distribution. Explain the different steps in formulation of a frequency table.