

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2024

Economics

ECO 4B 05—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—II
 (2019 Admission onwards)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A (Short Answer Questions)

Maximum marks in this Section is 25.

Students can attempt all questions.

Each question carries a maximum of 2 marks.

1. Evaluate the limit of the function

$$\lim_{x \rightarrow 4} \frac{x^2 - 4^2}{x - 6}$$

2. Determine the maxima and minima values of $x^3 - 6x^2 + 9x - 5$.
3. What is Laspeyre's index number ?
4. A box contains 2 white socks and 2 blue socks. Two socks are drawn at random. Find the probability 'p' they are match (same colour).
5. What is a mutually exclusive event ?
6. Distinguish between BSE-SENSEX and NSE-NIFTY.
7. Define Maternal Mortality rate.
8. Explain the term :
 - (i) Equally like events ; and
 - (ii) Exhaustive events.
9. A die is thrown. Find the probability of getting (i) A '4' ; (ii) An even number ; (iii) Less than 3 ; and (iv) '3' or '5'.
10. Explain the Subjective approach to Probability.

Turn over

11. What do you mean by Irregular variations ?
12. Name different types of fertility rates.
13. Explain the term (i) Sample space ; and (ii) Sample point.
14. What are the uses of Wholesale price index numbers ?
15. The demand for a particular commodity is $x = 39 - 2p$. Find the equation to the Total revenue curve.

Section B (Short Essay Questions)

Maximum marks in this Section is 35.

Students can attempt all questions.

Each question carries a maximum of 5 marks.

16. Find the Elasticity of demand with respect to price for the demand function

$$D = \frac{8}{P^{3/2}}$$

17. One card is drawn from a standard pack of 52. What is the probability that is either a king or a queen ?
18. What are the important components of Time series ?
19. Revenue function of a firm is given by $R = 14x - x^2$. and the cost function by $T = x(x^2 - 2)$. Find AC, MC, MR and equilibrium position.
20. Explain the concept of base shifting, splicing and deflating.
21. Calculate index number for 2019 on the base prices for 2015 from the following by average of price relative method :

Items	Bricks	Timber	Plasterboard	Sand	Cement
Price in Rs. (2015)	10	20	5	2	7
Price in Rs. (2019)	16	21	6	3	14

22. What are the important measurements of Mortality ?
23. Define Probability. Briefly explain the concept of (i) Random experiments ; (ii) Mutually exclusive events ; (iii) Exhaustive events ; (iv) Equally likely events ; and (v) Independent events.

Section C (Long Essay Questions)*Answer any two questions.**Each question carries a maximum of 10 marks.*

24. (i) Differentiate $y = \frac{(x+1)(2x+1)}{(x-3)}$.

(ii) Differentiate $x^5 + e^x$.

25. Briefly explain different types of Probability.

26. Calculate Fisher's ideal index number from the following data :

Commodity	2017		2018	
	Price	Quantity	Price	Quantity
A	14	32	12	52
B	24	37	11	33
C	17	21	8	44
D	12	27	10	37

27. What do you mean by Vital Statistics? Point out the important uses of Vital Statistics.

(2 × 10 = 20 marks)