

C 41291

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Name.....

Reg. No.....

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2023**

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. SENSEX.
2. Price elasticity of demand.
3. Optimization.
4. Moving average method.
5. Unweighted and weighted index numbers.
6. Splicing of index numbers.
7. Time series data.
8. Sample space.
9. Base year.
10. Crude birth rate.
11. Gross reproduction rate and net reproduction rate.
12. Subjective probability.
13. Bayes' Theorem.
14. Total utility and marginal utility.
15. Vital statistics.

Turn over

Section B

*Short Essay/paragraph Questions. Maximum marks in this section is 35.
Students can attempt all questions. Each question carries a maximum of 5 marks*

16. How do you find the limit and continuity of a function ?
17. Assume that you have been given dice and a pack of 52 cards. You have to throw a dice and then you have to pick up a card. What is the probability that you picked up a red card and threw 6 on the dice ?
18. How do you know if events are mutually exclusive in probability ?
19. Explain time series analysis. What are the components of time series analysis ?
20. Explain economic application of derivatives. Assume that the total cost (C) and the total revenue (R) functions of a firm are given by $C = 5q^2 + 10$ and $R = -2q^2 + 6q$. Find the output level (q) at which the profit is maximum.
21. Explain Marshall-Edgeworth and Kelley's Methods of index number.
22. Prepare a note on any four types of vital statistics.
23. Differentiate between mutually exclusive and collectively exhaustive events ?

Section C

*Long Essay Questions.
Answer any two questions.*

Each question carries a maximum of 10 marks.

24. Explain Maxima and minima of functions. Find out the minimum and maximum values of :
 $Z \equiv 8X^3 + 2XY - 3X^2 + Y^2 + 1$.
25. What are the Uses of Index Numbers ? Compute (i) Laspeyre's ; (ii) Paasche's ; and (iii) Fisher's index number for the following data :

Item	Price		Quantity	
	Base Year	Current Year	Base Year	Current Year
A	6	10	50	50
B	2	2	100	120
C	4	6	60	60
D	10	12	30	25

26. Discuss the uses of Vital Statistics.
27. What are the important types of probability ? Explain meaning and characteristics of classical probability siting suitable example.

(2 × 10 = 20 marks)