

D 140914

(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2026**

Economics

ECO 4B 05—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—II

(2019 Syllabus)

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. Factor reversal test.
2. Priori probability.
3. Gross reproduction rate.
4. Optimization.
5. Subjective probability.
6. Mutually exclusive events.
7. Bernoulli trials.
8. Time series analysis.
9. Couple protection ratio.
10. Splicing and deflating.
11. Differentiate $\log X$ with respect to X^2 .
12. Infant mortality rate.
13. Method of least squares.
14. Limit and continuity of a function.
15. Logarithmic function.

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. Prepare a note on stock price indices.
17. What do you know about probability ? Assume the probability that A solves the problem is 0.5, and the probability that B solves is 0.4. What is the probability that the problem is solved by at least one of them ?
18. What are the components of time series analysis ?
19. What do you mean by independence of events ? If A and B are two mutually exclusive events and $P(A) = 0.45$ and $P(B) = 0.35$, find $P(A \text{ or } B)$.
20. Explain the uses of index numbers.
21. Differentiate between maxima and minima of functions using suitable example.
22. Explain the rules of differentiation.
23. Find the first and second order derivatives of the function $Z = 12 - X^2 - Y^2 + XY$.

Section C (Long Essay Questions)

*Answer any **two** questions.*

Each question carries a maximum of 10 marks.

24. What do you mean by derivative of single variable and derivative of a multivariable function ? Evaluate economic application of derivatives.
25. What do you mean by Classical Probability ? Consider, the probability that A solves a problem in statistics is $\frac{2}{5}$ and the probability that B solves it is $\frac{3}{8}$. If they try independently find the probability that (i) both solve the problem (ii) none solve the problem (iii) atleast one solve the problem.
26. Differentiate between unweighted and weighted index numbers. What are the important weighted index numbers ?
27. Explain the meaning and uses of Vital Statistics. Examine the differences between important fertility rates.

(2 × 10 = 20 marks)

D 140914–A

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ECO 4B 05—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—II

(2019 Syllabus)

(Multiple Choice Questions for SDE Candidates)

Time : 15 Minutes**Total No. of Questions : 20****Maximum : 20 Marks****INSTRUCTIONS TO THE CANDIDATE**

1. This Question Paper carries Multiple Choice Questions from 1 to 20.
2. The candidate should check that the question paper supplied to him/her contains all the 20 questions in serial order.
3. Each question is provided with choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and enter it in the main answer-book.
4. The MCQ question paper will be supplied after the completion of the descriptive examination.

ECO 4B 05—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—II

(Multiple Choice Questions for SDE Candidates)

1. The weighted average of price relations using basic values as weights is same as the _____.
(A) Laspeyres quantity index. (B) Paasches price index.
(C) Laspeyres price index. (D) Kelly's price index.
2. Which one of the following index numbers is based on Geometric Mean ?
(A) Laspeyres index number. (B) Fischer's index number.
(C) Paasches index number. (D) Bowley's index number.
3. Which of the following statement is not correct ?
Fishers' index:
(A) Lies between Laspeyres' (L) & Paasches' index (P).
(B) Is the Arithmetic mean of L & P.
(C) Is the Geometric mean of L & P.
(D) Is equal to L or P if $L = P$.
4. Death rate obtained for a segment of a population is known as :
(A) Specific death rate. (B) Crude death rate.
(C) Standardised rate. (D) Vital index.
5. Making allowances for the effect of changing price levels is called :
(A) Splicing. (B) Base shifting.
(C) Deflating. (D) None of these.
6. Weather or climate changes are examples of :
(A) Secular trend. (B) Seasonal variation.
(C) Cyclical variation. (D) Irregular variation.

7. Purchasing Power of money :

- (A) Price index $\times 100$. (B) $\frac{\text{price index}}{100}$.
- (C) $\frac{100}{\text{price index}}$. (D) Real wage.

8. The age specific death rate for the babies of age less than one year is specifically called :

- (A) Neonatal death rate. (B) Infant mortality rate.
- (C) Maternal mortality rate. (D) Foetal death rate.

9. Test to determine whether a given method will work both forward and backward.

- (A) Unit test. (B) Factor reversal test.
- (C) Time reversal test. (D) None.

10. Registration of vital statistics is organized at the apex by :

- (A) Director General. (B) Registrar General.
- (C) Census Commissioner. (D) All the above.

11. _____ probability is the probability that an event will occur given that another event has already occurred.

- (A) Conditional event. (B) Compound event.
- (C) Marginal event. (D) Both (B) and (C).

12. The result of an experiment is called :

- (A) Trial. (B) Event.
- (C) Outcome. (D) Random experiment.

13. The derivative of e^x is :

- (A) xe^{x-1} . (B) e^x .
- (C) $\log e^x$. (D) $\frac{1}{e^x}$.

Turn over

14. Inflation is measured by using _____.
(A) Consumer price index. (B) Wholesale price index.
(C) Industrial Production index. (D) Retail price index.
15. Find the derivative of the following function $y = kx^2$.
(A) kx^2 . (B) $k(2x)$.
(C) $2kx$. (D) k^2x^2 .
16. The function $3x^3 + 3x^2 + x - 10$ is :
(A) An increasing function. (B) Decreasing function.
(C) Standard function. (D) None of the above.
17. In which approach to probability the outcomes are equally likely to occur ?
(A) Classical Probability. (B) Relative Frequency.
(C) Subjective Probability. (D) In both (A) and (B).
18. The joint probability is :
(A) The likelihood of two events happening together.
(B) The likelihood of an event happening given that another event has already happened.
(C) Based on two mutually exclusive events.
(D) None of the above.
19. The events A and B are exhaustive if :
(A) $A \cup B = A$. (B) $A \cup B = B$.
(C) $A \cup B = S$. (D) All of the above.
20. What is the probability that the first card extracted from well shuffled standard deck of 52 playing cards is an ace :
(A) $4/52$. (B) $2/52$.
(C) $13/52$. (D) $3/52$.