

D 103127

(Pages : 3)

Name.....

Reg. No.....

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 meant by Vital Statistics ? Point out the important uses of Vital Statistics.

(2 × 10 = 20 marks)

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Economics

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

(2019 Admission onwards)

(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. Which one of the following statements is correct ?
 - (1) Laspeyres' index shows an upward bias.
 - (2) Paasches' index shows an upward bias.
 - (3) Laspeyres' index shows a downward bias.
 - (4) Paasches' index shows a downward bias.

(A) 1 and 4. (B) 1 only.
(C) 2 and 3. (D) 3 and 4.
2. The consumer price index Numbers is also known as _____.
 - (A) Cost of Living index number.
 - (B) Industrial Production index
 - (C) Wholesale Price index.
 - (D) Cost of Consumption Index.
3. Consumer price index number is constructed for :
 - (A) A well-defined section of people.
 - (B) Workers only.
 - (C) All people.
 - (D) All the above.
4. Factor reversal test permits the interchange of :
 - (A) Base periods.
 - (B) Price and Quantity.
 - (C) Weights.
 - (D) None of the above.
5. 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.
6. 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.

7. At state level, the registration of vital statistics is carried by :
- (A) Director of economics and statistics.
 - (B) Chief Returning Officer.
 - (C) Chief Registrar.
 - (D) None of the above.
8. Vital statistics throws light on :
- (A) Changing pattern of the population during intercensal period.
 - (B) Growth of population.
 - (C) Fertility of races.
 - (D) All the above.
9. Simple event is also known as :
- (A) Elementary event.
 - (B) Composite event.
 - (C) Joint event.
 - (D) None of the above.
10. The derivative of e^{x^2} is :
- (A) e^{x^2} .
 - (B) e^{2x} .
 - (C) $2e^x$.
 - (D) $2xe^{x^2}$.
11. The derivative of e^x is :
- (A) xe^{x-1} .
 - (B) e^x .
 - (C) $\log e^x$.
 - (D) $\frac{1}{e^x}$.
12. Mr. X is rolling a die. What is the probability of getting greater than 5 ?
- (A) $\frac{1}{6}$.
 - (B) $\frac{1}{3}$.
 - (C) $\frac{1}{2}$.
 - (D) 1.

Turn over

13. Find the derivative of the following function $y = kx^2$:
- (A) kx^2 . (B) $k(2x)$.
(C) $2kx$. (D) k^2x^2 .
14. Find the probability of obtaining an odd number in one roll of a die :
- (A) $\frac{3}{6}$. (B) $\frac{5}{6}$.
(C) $\frac{6}{6}$. (D) $\frac{2}{6}$.
15. Increasing function if and only of its derivatives on (a, b) is :
- (A) Negative. (B) Non-negative.
(C) Non-positive. (D) None of the above.
16. 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.
17. The set of all possible outcomes in an experiment is known as :
- (A) Sample space. (B) Universal set.
(C) Sample point. (D) Random experiment.
18. $P(A \cup \bar{A}) =$ _____.
- (A) 0. (B) Depends on the events.
(C) Not defined. (D) 1.
19. A box contains 15 papers which are numbered from 1 to 15. A paper is drawn random, find the probability that the number is an odd or an even ?
- (A) $8/15$. (B) $15/7$.
(C) $6/15$. (D) $5/15$.
20. For an impossible event the value of probability will be :
- (A) Less than 1. (B) Greater than one.
(C) 0. (D) 1.