C 61303-A　　　　　　　(Pages : 4)　　　　　Name...

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FOURTH SEMESTER B.A. DEGREE EXAMINATION, APRIL 2019

(CUCBCSS—UG)

Economics

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

(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 is line reversal list ?

    (A) $P_{01} \times Q_{01} = \dfrac{\sum p_1 q_1}{\sum p_0 q_0}$.

    (B) $P_{01} \times P_{10} = 1$.

    (C) $P_{01} \times P_{12} \times P_{20} = 1$.

    (D) $P_{01} \times P_{10} \neq 1$.

2. Which of the following statement is correct ?

    (A) Laspeyres' index shows an upward bias.

    (B) Paastes' index shows an upward bias.

    (C) Laspeyres' index shows an downward bias.

    (D) Paasches' index shows an downward bias.

3. 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.

4. Which one of the following indices satisfies both time reversal and factor reversal. list ?

    (A) Lasperyres index number.

    (B) Fischer's index number.

    (C) Paasches index number.

    (D) Bow ley's index number.

5. If the Paasches' index is 196 and Fishers index is 210. What is the value of the 'Laspeyres' index ?

    (A) 220.

    (B) 215.

    (C) 225.

    (D) 230.

6. Which of the following statement is not correct ? Fishers' index :

    (A) Lies between Laspeyres' (L) and Paasches' index.

    (B) Is the Arithmetic mean of L and P.

    (C) Is the Geometric mean of L and P.

    (D) Is equal to L or P if L = P.

7. The procedure of combining two or more overlapping series oi index numbers into one continuous series is called ————————.

    (A) Splicing.   (B) Base shifting.

    (C) Deflating.   (D) None of these.

8. Fishers ideal index is obtained as :

    (A) The sum of Laspeyre's and paasche's indices.

    (B) The geometric mean of Laspeyer's and paasche's indices.

    (C) The arithmetic mean of Laspeyer's and paasche's indices.

    (D) The harmonic mean of Laspeyre's and paasche's indices.

9. Laspeyres index measures change in :

    (A) Fixed market basket.

    (B) Current consumption.

    (C) Both fixed and current market basket.

    (D) None.

10. Making allowances for the effect of changing price levels is called

    (A) Splicing.   (B) Base shifting.

    (C) Deflating.   (D) None of these.

11. Recurrent variations in time series that usually fast longer than a year is known as ————————.

    (A) Seasonal variation.   (B) Secular trend.

    (C) Irregular variation.   (D) Cyclical variation.

12. Purchasing power of money :

    (A) Price index × 100.   (B) Price index/100.

    (C) 100/price index.   (D) Real wage.

13. The method which is not used for estimating seasonal components of a time series :

    (A) Ratio to trend method.   (B) Link relative method.

    (C) Method of simple average.   (D) Method of least squares.

Turn over

14. Paasches index number is based on :

    (A) Base year quantity.   (B) Current year quantity.

    (C) Day year quantity.   (D) None.

15. The formula $P_{01} \times Q_{01} = \dfrac{\sum p_1 q_1}{\sum p_0 q_0}$ shows :

    (A) Factor reversal test.   (B) Time reversal test.

    (C) Unit test.   (D) None.

16. Suppose you have 10 currencies in your pocket. Of these currencies, 2 are Dollars, If you choose one currency randomly, what is the probability that the currency is not Dollar :

    (A) $\dfrac{2}{10}$.   (B) $\dfrac{4}{5}$.

    (C) $\dfrac{2}{8}$.   (D) $\dfrac{1}{5}$.

17. A box contains 45 red balls and 60 blue balls. Suppose a candy is selected at random, What are the odds against selecting a red ball ?

    (A) $\dfrac{3}{4}$.   (B) $\dfrac{4}{3}$.

    (C) $\dfrac{3}{7}$.   (D) $\dfrac{7}{3}$.

18. Composite event is also known as :

    (A) Elementary event   (B) Compound event.

    (C) Joint event.   (D) None of the above.

19. The name associated with Subjective probability is

    (A) Ramsey.   (B) Kolomogrov.

    (C) Richard Good.   (D) Savage.

20. ———— probability is the probability that an event will occur given that another. Event has already occured.

    (A) Conditional event.   (B) Compound event.

    (C) Marginal event.   (D) Both (b) and (c)

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(CUCBCSS—UG)

Economics

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

Time : Three Hours   Maximum : 80 Marks

Use of Calculator is permitted.

Part A

*Answer **all** questions.*

1. $\lim\limits_{x \to 2} \dfrac{x^2 - 5x + 6}{x - 2}$, is ——————.

    (i) -1.   (ii) 0.

    (iii) 1.   (iv) 2.

2. The derivative of $\log x$ with respect to x is ——————.

    (i) 1.   (ii) x.

    (iii) $1/x$.   (iv) 0.

3. If the cost per output is $k = 3x + 18$, then marginal cost when $x = 3$ is ——————.

    (i) 3.   (ii) 9.

    (iii) 27.   (iv) 18.

4. The derivative of $y = 1/x$ with respect to x is ——————.

    (i) x.   (ii) $-x$.

    (iii) $-x^2$.   (iv) $-x^{-2}$.

5. When $TR = 100 - x^2$, the MR is ——————.

    (i) 100.   (ii) $-2x$.

    (iii) $-x^2$.   (iv) None of these.

Turn over

6. If Laspayer's and Paasche's index numbers are calculated as 120 and 124. Then Fisher's index number is :

    (i)   122.   (ii)   121.98.

    (iii) 123.   (iv) None of these.

7. The AM of Laspayer's and Paasche's index numbers is ————— index number.

    (i)   Fisher's.   (ii)   Kelley's.

    (iii) Dorbish-Bowley.   (iv) Marshal Edgeworth.

8. For an index number satisfying time reversal test $p_{01} \times p_{10} =$ —————.

    (i)   0   (ii)   1.

    (iii) 100.   (iv) None of these.

9. Number of female children born to 1000 females is —————.

    (i)   1000 TFR.   (ii)   1000 NRR.

    (iii) 1000 GRR.   (iv) 1000 SFR.

10. Two unbiased coins are tossed. P (getting tails on both of the coins) = —————.

    (i)   0.25.   (ii)   0.50.

    (iii) 0.75.   (iv) 1.

11. P (A) = 0.5, P (B) = 0.4, if A and B are independent, $P(A/B) =$ —————.

    (i)   0.2.   (ii)   0.02.

    (iii) 0.5.   (iv) 0.4.

12. If A and B are mutually exclusive, $P(A \cap B) =$ —————.

    (i) $P(A)$.   (ii) $P(A)P(B)$.

    (iii) $P(B)$.   (iv) None of these.

(12 × ½ = 6 marks)

Part B (Short Answer Type)

Answer any **ten** *questions.*

Each one carries 2 marks.

13. Find the derivative of $\dfrac{x^2 - 1}{x^2 + 1}$ with respect to x.

14. If $y = 3x^3 + 2x,$ find $\dfrac{d^2 y}{dx^2}.$

15. Define marginal productivity.

16. Find the marginal cost if the total cost is $1000 + 100x - 10x^2 + x^3.$

17. Total revenue function of a firm is $R = 21x - x^2.$ Find the marginal revenue when 10 units are sold.

18. Define elasticity.

19. Define splicing.

20. Define fixed base index number.

21. Define Kelley's index number.

22. Define Crude death rate.

23. $P(A) = 0.5, P(B) = 0.4, P(A \cup B) = 0.7.$ Verify whether A and B are independent.

24. State addition and multiplication theorem of probability of two events A and B.

$(10 \times 2 = 20 \text{ marks})$

Part C (Short Essay Questions)

Answer any **six** *questions.*

Each one carries 5 marks.

25. If $y = e^x (1 + x),$ show that $\dfrac{d^2 y}{dx^2} = e^x + \dfrac{dy}{dx}.$

26. The cost function $c = a + bx + cx^2.$ Obtain marginal cost and average cost functions. **Turn over**

27. Explain GRR and NRR.

28. Explain price and quantity index numbers.

29. Write a note on cost of living index number.

30. Explain age specific fertility rate and total fertility rate.

31. Define random experiment. Write down the sample space of the random experiment of tossing of two unbiased dice.

32. Given $P(A) = 0.6, P(B) = 0.4, P(A \cap B) = 0.3$. Find (i) $P(A \cup B)$; (ii) $P\left(A^c/B\right)$; (iii) $P\left(A^c/B^c\right)$.

$(6 \times 5 = 30 \text{ marks})$

Part D (Essay Questions)

Answer any **two** *questions.*

Each one carries 12 marks.

33. The total revenue function for x outputs is given by $R = 3000 - (3-x)^2$ find the value of x for which R is maximum and the maximum value of R.

34. Calculate (i) Fisher's index number ; (ii) Marshal Edgeworth index number using the following data :

Commodity	2004		2008	
	Price (p_0)	Quantity (q_0)	Price (p_1)	Quantity (q_1)
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

35. Three unbiased coins are tossed. Write the sample space. Find (i) P (getting at least two heads) ; (ii) P (getting at most one head) ; (iii) P (getting exactly two heads) ; (iv) P (getting at least one tail) ; and (v) P (getting all coins of same side).

36. Two boxes contains respectively 2 red, 3 black balls and 3 blue balls; 4 red, 4 black and 2 blue balls. One of the boxes is selected randomly and two balls are drawn. They happened to be 'one red and one blue'. What is the probability that they come from the second box ?

$(2 \times 12 = 24 \text{ marks})$