

**B.A. DEGREE END SEMESTER EXAMINATION OCTOBER 2017****SEMESTER –5: ECONOMICS (CORE COURSE)****COURSE: 15U5CRECO07: QUANTITATIVE TECHNIQUES FOR ECONOMIC ANALYSIS***(For Regular 2015 admission)*

Time: Three Hours

Max. Marks: 75

**PART A**Answer **all** questions in one or two sentences. Each question carries 1 mark.

1. Secondary data
2. Null Set
3. Simple Random Sampling
4. Fisher's Ideal Index
5. Histogram
6. Cartesian product
7. Moving Average Method
8. Inverse of a Matrix
9. Venn Diagram
10. Cross Sectional data

(1 x 10 = 10)

**PART B**Answer **any eight** of the following in three or four sentences. Each question carries 2 marks.

11. Explain the functions of statistics
12. Distinguish between primary data and secondary data?
13. Explain the various methods of constructing index numbers?
14. What are the uses of cost of living index?
15. Explain the components of time series?
16. Explain the method of least squares?
17. What is determinant of a matrix?
18. if  $n(A)=30$  ,  $n(B)=40$  ,and  $n(A\cup B)=45$ ,find  $n(A\cap B)$
19. Heights (in cm) of 30 girls of Class IX are given below:  
140, 140, 160, 139, 153, 153, 146, 150, 148, 150, 152, 146, 154, 150, 160, 148, 150, 148, 140,  
148, 153, 138, 152, 150, 148, 138, 152, 140, 146, 148.  
Prepare a frequency distribution table for this data.
20. What is meant by non-probability sampling and probability sampling? (2 x 8 = 16)

**PART C**Answer **any five** of the following in not more than one page. Each question carries five marks.

21. In a competition, a school awarded medals in different categories. 36 medals in dance, 12 medals in dramatics and 18 medals in music. If these medals went to a total of 45 persons and only 4 persons got medals in all the three categories, how many received medals in exactly two of these categories?

22. Calculate price index number for 2004 taking 1994 as the base year from the following data by simple aggregative method:

Commodities	A	B	C	D	E
Price(1994)Rs.	100	40	10	60	90
Price(2004) Rs.	140	60	20	70	100

23. Explain the various methods of measuring the trend values?  
 24. What are the features of index number. Explain the problems in the construction of index numbers?  
 25. Convert the fixed base index numbers into chain base index numbers  
 Year: 1989 1990 1991 1992 1993  
 Index: 80 88 105.60 95.04 133.06  
 26. Fit a straight line trend by the method of least squares with the following data

X	1	2	3	4	5
Y	3	4	6	9	10

27. What are the various methods of collecting statistical data (5 x 5 = 25)

#### PART D

Answer **any two** of the following in not exceeding four pages. Each question carries 12 marks.

28. Define sampling. Explain the various sampling techniques used in statistical investigation.  
 29. Calculate Fisher's ideal index from the following data and prove that it satisfies both the time reversal and factor reversal tests.

Commodity	2009		2010	
	Price	Expenditure	Price	Expenditure
A	8	80	10	120
B	10	120	12	96
C	5	40	5	50
D	4	56	3	60
E	20	100	25	150

30. If  $A = \{1, 3, 5\}$ ,  $B = \{3, 5, 6\}$  and  $C = \{1, 3, 7\}$   
 (i) Verify that  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$   
 (ii) Verify  $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$   
 31. Construct the consumer price index number for 1988 on the basis of 1987 from the following data using: **(1)** Aggregate expenditure method **(2)** Family budget method.

Commodities	Quantity consumed in 1987	Unit	Prices	
			1987	1988
A	6 quintal	quintal	315.75	316.00
B	6 quintal	quintal	305.00	308.00
C	1 quintal	quintal	416.00	419.00
D	6 quintal	quintal	528.00	610.00
E	4 kg	kg	12.00	11.50
F	1 quintal	quintal	1020.00	1015.00

(12 x 2 = 24)