

**2 0 1 9**  
( 2nd Semester )

**ECONOMICS**  
( Honours )

Paper : Eco-202

[ **Quantitative Technique—II** ]

*Full Marks : 70*  
*Pass Marks : 45%*  
*Time : 3 hours*

*The figures in the margin indicate full marks  
for the questions*

Answer **five** questions, taking **one** from each Unit

**UNIT—I**

1. (a) Define statistics. Discuss the use of statistics in economics. 2+6=8
- (b) Distinguish between primary and secondary data. Explain the methods of collecting primary data. 2+2+2=6

2. (a) Discuss various types of graph used in presentation of data. 6
- (b) Draw a bar diagram to represent the following figures relating to manufacturing of fans : 8

<i>Years</i>	:	1984	1985	1986	1987	1988
<i>No. of fans</i>	:	1200	1700	1900	2800	2100

## UNIT—II

3. (a) Define mode. Write the merits and demerits of mode. 2+4=6
- (b) Calculate the values of mode from the following distribution : 8

<i>Class interval</i>	<i>Frequency</i>
10-20	4
20-30	6
30-40	5
40-50	10
50-60	20
60-70	22
70-80	24
80-90	6
90-100	2
100-110	1

4. (a) Write short notes on the following :  $3+3=6$   
 (i) Coefficient of variation  
 (ii) Variance
- (b) Calculate Karl Pearson's coefficient of skewness from the data given below : 8

<i>Value</i>	<i>Frequency</i>
10	1
20	5
30	12
40	22
50	17
60	9
70	4

## UNIT—III

5. (a) What is correlation? Can there be correlation between two variables? If yes, give reasons.  $2+5=7$
- (b) Calculate the coefficient of rank correlation from the following data : 7

<i>X</i>	<i>Y</i>
35	10
40	10
25	11
55	14
85	15
90	13
65	10
55	12
45	14
50	11

6. (a) What are regression lines? Why is it necessary to consider two lines of regression? 2+4=6
- (b) From the following data, obtain the two regression equations : 8

<i>Sales</i>	<i>Purchases</i>
41	28
82	56
62	35
37	17
58	42
96	85
127	105
74	61
123	98
100	73

#### UNIT—IV

7. (a) What is an index number? Discuss the significance of a study of an index number. 2+3=5

- (b) Below are given the figures of production (in million tonnes) of a sugar factory :

Year	Production (in million tonnes)
2000	77
2002	88
2003	94
2004	85
2005	91
2006	98
2009	90

Fit a straight line by the 'least squares' method and tabulate the trend values. 9

8. (a) What is a time series? Discuss the various components of time series. 2+5=7

- (b) Construct Consumer Price Index Number for 1986 on the basis of 1985 from the following data by using—

(i) aggregate expenditure method;

(ii) family budget method :

7

Commodity	Quantity consumed in 1985	Price in 1985	Price in 1986
A	6	5.75	6
B	6	5	8
C	1	6	9
D	6	8	10
E	4	2	1.5
F	1	20	15

## UNIT—V

9. (a) State the addition and multiplication theorems of probability and give one example each illustrating the application of these theorems. 8
- (b) Explain the meaning of the term 'mathematical expectation' with the help of an example. 6
10. (a) Explain the following events : 3+3=6  
 (i) Mutually exclusive event  
 (ii) Equally likely event
- (b) A bag contains 5 white and 8 red balls. Two drawings of 3 balls are made such that (a) the balls are replaced before the second trial and (b) the balls are not replaced before the second trial. Find the probability that the first drawing will give 3 white and the second 3 red balls in each case. 8

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