

2017
(2nd Semester)

ECONOMICS
(Honours)

Paper No. : Eco-202

[Quantitative Techniques—II (Statistics)]

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 tabulation and explain the objectives of tabulation. 2+6=8
(b) Distinguish between primary and secondary data. Explain the methods of collecting primary data. 2+2+2=6

2. (a) Discuss the six general rules for constructing a diagram. 6

- (b) Draw an ogive from the following data by less than and more than method :

$$4+4=8$$

Marks	No. of students
0-10	4
10-20	6
20-30	8
30-40	7
40-50	9
50-60	5
60-70	12
70-80	15

UNIT—II

3. (a) Define mode. State the merits and demerits of mode. $2+4=6$
- (b) Calculate arithmetic mean by step deviation method from the following data : 8

Marks (X)	No of students (F)
0-10	5
10-20	10
20-30	25
30-40	30
40-50	20
50-60	10

4. (a) Calculate the Mean Deviation and coefficient of MD from the following data :

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X	F
0-10	5
10-20	8
20-30	12
30-40	15
40-50	20
50-60	14
60-70	12
70-80	6

- (b) Calculate inter-quartile range (IQR), quartile deviation (QD) and coefficient of QD from the following data :

7

X	F
10-20	3
20-30	61
30-40	32
40-50	132
50-60	154
60-70	51
70-80	3

(Turn Over)

UNIT—III

5. (a) Distinguish positive Correlation and Regression. 4
- (b) Using 1964 as the origin, obtain a straight line trend by the method of least square. Also find out the trend value of the year 1961, 1967 and 1968. 10

<i>Year</i>	<i>Values</i>
1960	140
1962	144
1963	160
1964	152
1965	168
1966	176
1969	180

6. (a) Calculate Karl Pearson's coefficient of correlation between birthrate and death rate from the following data : 8

<i>Year</i>	<i>Birthrate</i>	<i>Death rate</i>
1931	24	15
1941	26	20
1951	32	22
1961	33	24
1971	35	27
1981	30	24

- (b) Calculate the coefficient of rank correlation from the following data : 6

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

UNIT—IV

7. (a) What is an index number? Discuss the significance of a study of an index number. 6
- (b) Discuss the various methods of measuring the trend of a time series. 8
8. (a) Calculate seasonal index by ratio to moving average method from the following data. The price of the commodity is given below : 7

Year	1975	1976	1977	1978
1st Qtr	75	86	90	100
2nd Qtr	60	65	72	78
3rd Qtr	54	63	66	72
4th Qtr	59	80	85	93

- (b) Construct Consumer Price Index Number for 1986 on the basis of 1985 from the following data by using
 (i) aggregate expenditure method and
 (ii) family budget method :

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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. 6
- (b) What is conditional probability? State the classical definition of probability. 6
- (c) What is the chance of getting King in a draw from a pack of 52 cards? 2
10. (a) If a bag contains 5 red balls and 3 white balls. A second bag contains 4 red balls and 7 black balls. If one ball is drawn at random from each bag, what is the probability that both are of the same colour? 6

(b) A petrol pump operator sales on a rainy day ₹ 90,000 worth of petrol on rainy days and average of ₹ 95,000 on clear days. Statistics from Meteorological Department shows that the probability is 0.78 for clear weather and 0.46 for rainy weather on coming Tuesday. Find out the expectation sales of petrol on that day.

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