2 0 2 3

(FYUGP)

(3rd Semester)

ECONOMICS

(Major)

Paper Code : EC3 CC6

(Statistical Methods for Economics)

Full Marks : 75
Pass Marks : 40%

Time : 3 hours

_The figures in the margin indicate full marks
for the questions_

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

UNIT—1

1. (a) Define statistics. State and explain the characteristics of statistics in plural sense. 3+7=10

   (b) Distinguish between primary and secondary data. 5

2. (a) Distinguish between census and sampling methods of collecting data. 7

(b) State and explain the methods of collecting primary data. 8

UNIT—2

3. State and explain the principal steps in sample survey. What are the merits of sampling method? Explain. 8+7=15

4. What do you mean by sampling and non-sampling errors? Explain the reasons for sampling and non-sampling errors. 5+10=15

UNIT—3

5. (a) Define arithmetic mean. State its merits and demerits. 2+5=7

(b) Calculate arithmetic mean by step deviation method from the following distribution : 8

Marks	No. of Students
0–10	5
10–20	10
20–30	25
30–40	30
40–50	20
50–60	10

(Continued)

6. (a) What do you mean by 'measures of dispersion'?   2

(b) Calculate standard deviation and its coefficient from the following distribution :   7+2=9

Class	Frequency
0–10	3
10–20	8
20–30	15
30–40	20
40–50	25
50–60	10
60–70	9
70–80	6
80–90	4

(c) Distinguish between skewness and kurtosis.   4

UNIT—4

7. (a) What is probability? Explain the terms 'event', 'mutually exclusive event' and 'equally likely events' with suitable examples.   2+2+2+2=8

(b) A bag contains 7 red, 12 white and 4 green balls. What is the probability that—

(i) 3 balls drawn are all white;

(ii) 3 balls drawn are one of each colours? 3½+3½=7

8. (a) State the addition and multiplication theorem of probability. Explain with a suitable example. 10

(b) What is mathematical expectation? Explain with an example. 5

UNIT—5

9. (a) Briefly explain the different components of time series. 8

(b) Fit a straight line trend by the least-square method and tabulate the trends of the following data : 7

Years	Production (in tonnes)
1971	40
1972	45
1973	46
1974	42
1975	47
1976	50
1977	56

(Continued)

10. (a) Define index number. Explain the main problems which are faced in the construction of index number. 2+5=7

(b) Construct index number of price from the following data by (i) Laspeyres', (ii) Paasche's and (iii) Fisher's methods : 3+3+2=8

	2020		2022	
Commodity	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

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