

6/H-16 (vii) (Syllabus-2015)

2 0 1 8

(April)

ECONOMICS

(Honours)

(**Statistics**)

Marks : 75

Time : 3 hours

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

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

UNIT—I

1. (a) What are the characteristics of a good
measure of central tendency? 5
- (b) Find the mean and standard deviation
of first n -natural numbers. 3+7=10
2. (a) Find the 'mean deviation from median'
of the following data : 5
17, 26, 14, 16, 12, 24, 21

(2)

- (b) Calculate variance and coefficient of variation from the following data : 4+4

Class	Frequency
0-10	13
10-20	19
20-30	31
30-40	43
40-50	34
50-60	17
60-70	9
70-80	6

UNIT—II

3. Calculate Karl Pearson's coefficient of correlation between expenditure and sale from the data given below :

Expenditure ('000 ₹)	39	65	62	90	82	75	25	98	36
Sale (in lakh ₹)	47	53	52	86	62	68	60	91	51

4. The values of X and Y are given below :

X : 12 13 14 11 8 6 4 2 16 2
 Y : 80 86 89 76 73 70 55 50 90 9

Find the two lines of simple regression.

UNIT—III

5. (a) Define time series and mention its components.

(3)

- (b) Fit a trend equation $Y = a + bX$ and obtain the trend values from the following data : $10+3=13$

X : 0 5 10 15 20 25
 Y : 10 14 19 25 31 36

- i. (a) Define index number and briefly discuss its uses. 5

- (b) The prices per unit and the number of units consumed for four commodities A, B, C and D in two time periods are given below :

Commodity	Base Year		Current Year	
	Price (in ₹)	Quantity (in kg)	Price (in ₹)	Quantity (in kg)
A	20	8	40	6
B	50	10	60	5
C	40	15	50	10
D	20	20	20	15

- Compute Laspeyres', Paasche's and Fisher's index numbers. $4+4+2=10$

UNIT—IV

7. (a) State the addition and multiplication rules of probability. 4

(Turn Over)

(b) Let x be a random variable with sample space $S = \{1, 2, 3, 4, 5\}$ and $P(x=1) = \frac{1}{16}$

$$P(x=2) = \frac{1}{4}, \quad P(x=3) = \frac{3}{8}, \quad P(x=4) = \frac{1}{4}$$

$$P(x=5) = \frac{1}{16}. \quad \text{Find the probability}$$

the following :

(i) $P(x=4 \text{ or } x=1)$

(ii) $P(x \text{ is at least } 1)$

(c) What is a binomial distribution? Show that Poisson distribution is a limiting case of binomial distribution.

8. Distinguish between the following (take three) :

(a) Simple and Composite hypotheses

(b) Type-I errors and Type-II errors

(c) One-tailed and Two-tailed tests hypothesis

(d) Simple random sampling and Stratified random sampling

(e) χ^2 -distribution and t -distribution
