

2014

(6th Semester)

ECONOMICS

TENTH PAPER

(Quantitative Technique—II)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

Answer all questions

UNIT—I

1. Explain the concept of a measure of central tendency in statistical analysis. Compute the median value of the following distribution :

3+7=10

Class

interval : 110-120 120-130 130-140 140-150 150-160

Frequency : 6 25 48 72 116

Class

interval : 160-170 170-180 180-190 190-200

Frequency : 60 38 22 3

(2)

Or

Given the heights of boys and girls in a college are given below :

	Boys	Girls
Number	50	60
Average height	60	48
Variance	100	144

Find the—

- (a) combined mean;
- (b) combined standard deviation;
- (c) more dispersed in the distribution of heights. 4+4+2=10

UNIT—II

2. (a) (i) State and prove the addition theorem of probability. 6
- (ii) Find the probability of drawing a queen and a king from a well-shuffled card in two consecutive draws without being replaced. 4

Or

- (b) What is Poisson distribution? Explain its relationship with the binomial distribution. 3+7=10

(3)

UNIT—III

3. Find the correlation coefficient and coefficient of determination from the following data : 6+4=10

X : 12 9 8 10 11 13 7

Y : 14 8 6 9 11 12 3

Or

You are given the following data :

	X	Y
Mean :	36	85
SD :	11	8

Correlation coefficient = 0.66

- (a) Find the two regression equations.
(b) Estimate the value of X, when Y = 75.

8+2=10

UNIT—IV

4. From the data given below, compute price index number by using Fisher's method : 10

Commodity	2010		2013	
	Price	Quantity	Price	Quantity
A	8	10	10	15
B	8	20	15	25
C	4	20	5	30
D	2	8	2	10

(4)

Or

Define time series. What are the different components of time series? 2+8=10

UNIT—V

5. What are the various methods of measuring population growth? Discuss each of the methods with suitable illustration. 10

Or

Distinguish between gross reproduction rate and net reproduction rate. What are their limitations?

Country	Year	Population	Growth Rate	Rate of Increase
A	1950	100	1.5	1.5
B	1950	100	1.0	1.0
C	1950	100	0.5	0.5
D	1950	100	0.0	0.0

2014

(6th Semester)

ECONOMICS

TENTH PAPER

(Quantitative Technique—II)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 10)

Put a Tick (✓) mark against the correct answer in the brackets provided. 1×10=10

1. Which one is correct?

(a) $AM \leq GM \leq HM$ ()

(b) $AM \geq GM \geq HM$ ()

(c) $GM \geq AM \geq HM$ ()

(d) $GM \leq HM \leq AM$ ()

2. Skewness is a measure of

- (a) flatness of a distribution ()
(b) height of a distribution ()
(c) lack of symmetry of a distribution ()
(d) location of the central value ()

3. A bag contains 5 white, 6 red and 7 blue balls. A ball is drawn at random, what is the probability that it is the white ball?

- (a) $\frac{5}{18}$ ()
(b) $\frac{6}{18}$ ()
(c) $\frac{7}{18}$ ()
(d) $\frac{18}{18}$ ()

4. Under the normal curve, 'mean $\pm 2\sigma$ ' covers which of the following areas?

- (a) 68.26% ()
(b) 95.45% ()
(c) 99.73% ()
(d) 100.00% ()

5. Correlation coefficient always lies between

- (a) -1 and 0 ()
- (b) 0 and 1 ()
- (c) -1 and 1 ()
- (d) None of the above ()

6. The regression coefficients are independent of

- (a) change of origin only ()
- (b) change of scale only ()
- (c) change of origin and scale ()
- (d) None of the above ()

7. Fisher's index number is the

- (a) arithmetic mean of Paasche's index number and Laspeyres' index number ()
- (b) harmonic mean of Paasche's index number and Laspeyres' index number ()
- (c) geometric mean of Paasche's index number and Laspeyres' index number ()
- (d) None of the above ()

8. Which of the following is not a measurement of trend?

- (a) Graphic method ()
- (b) Method of semiaverages ()
- (c) Method of moving averages ()
- (d) Method of composite straight lines ()

9. Which of the following assumptions is not the property required for a stationary population?

- (a) Constant rate of emigration and immigration ()
- (b) Constant size ()
- (c) Constant age composition ()
- (d) Constant sex composition ()

10. Which of the following is also known as 'biometer of population'?

- (a) Net reproduction rate ()
- (b) Total fertility rate ()
- (c) Life table ()
- (d) Force of morbidity ()

(5)

SECTION—B

(Marks : 15)

Write on/Answer the following :

3×5=15

1. Calculate the coefficient of variation if standard deviation = 2.5 and mean = 10.

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2. What are the three axioms of modern probability theory?

(Marks : 15)

3x5=15

Write on/Answer the following:

1. Calculate the coefficient of variation if standard deviation = 3.5 and mean = 101.

(a) ...

9. Which of the following is not a probability distribution?

- (a) ...
- (b) ...
- (c) ...
- (d) ...

10. Which of the following is also known as 'margin of error'?

- (a) ...
- (b) Total Survey Error
- (c) ...
- (d) ...

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(7)

3. Write at least three problems in the construction of index numbers.

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4. Multiple correlation

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5. Infant mortality rate

VI/ECO

2014

(Part A - Descriptive)

100 Marks

1 Hour

(Qualitative Techniques - II)

Part A - 75

Part B - 25

(PART : B - DESCRIPTIVE)

(Marks - 25)

Answer the following questions in brief

(10 Marks)

Answer all questions

in the concept of a constant of variation
at statistical level. Compute the
value of the following distribution

3-7-10

115-120 125-130 135-140 145-150 155-160

4 8 12 16 20

165-170 175-180 185-190 195-200

10 15 20 25

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