Subject Code : VI/ECO (x) Booklet No. A 6 MAI 2015 438

6 MAI 2015

VI/ECO (x)

2015

(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 **one** question from each Unit

UNIT—I

1. What is mode? Calculate the mode of the following distribution of heights (in cm) of 50 students : 3+7=10

Class Interval	*Frequency*
145–146	2
147–148	5
149–150	8
151–152	15
153–154	9
155–156	6
157–158	4
159–160	1

2. A survey conducted in two villages indicated the following values of arithmetic mean and standard deviation of the monthly income of 150 households in each village :

	A	B
Mean monthly income (₹) :	350	375
Standard deviation :	10	12

Compute the combined mean and combined standard deviation. 3+7=10

UNIT—II

3. *(a)* State and prove the multiplication theorem of probability. 6

(b) A ball is drawn at random from a bag containing 4 white, 4 black, 3 yellow and 3 red balls. What is the probability of getting a white or a red ball? 4

4. Discuss the properties of normal or Poisson distribution. 10

UNIT—III

5. The ranking of 10 students in two subjects Economics and English are as follows :

Subjects	*Ranks*									
Economics :	3	5	8	4	7	10	2	1	6	9
English :	6	4	9	8	1	2	3	10	5	7

Calculate Spearman's rank correlation coefficient and also comment on the relation between the two subjects. 8+2=10

6. The following are the marks in Mathematics and Statistics of students in an examination :

	Mathematics (X)	*Statistics (Y)*
Mean	40	50
SD	10	16

Correlation coefficient (r) between X and Y is 0·5.

(a) Construct the two regression equations.

(b) Estimate the score in Statistics when the score in Mathematics is 50. 8+2=10

UNIT—IV

7. India's imports for 1980 to 1986 are given (in ₹ 100 crores) as below :

Years	1980	1981	1982	1983	1984	1985	1986
Imports	125·5	136·1	142·9	158·3	171·3	197·7	200·8

Fit a linear trend by the method of least squares. 10

8. Construct index number of prices from the following data by applying Laspeyre's method and Paasche's method : 5+5=10

Commodity	*2013*		*2014*	
	Price	*Quantity*	*Price*	*Quantity*
A	2	8	4	5
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

UNIT—V

9. Compute the crude and standardized death rates of two populations *A* and *B* from the following data : 5+5=10

Age group (in years)	*A*		*B*	
	Population	*Deaths*	*Population*	*Deaths*
Below 5	15000	360	40000	1000
5–30	20000	400	52000	1040
Above 30	10000	280	8000	240

(Continued)

10. Explain the meaning of the following : 5+5=10

(a) Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR)

(b) Gross Reproduction Rate (GRR) and Crude Rate of Natural Increase

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2015

(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. The second quartile is also known as

(a) arithmetic mean ( )

(b) median ( )

(c) mode ( )

(d) harmonic mean ( )

2. The values of mean, median and mode are alike in a

(a) positively-skewed distribution ( )

(b) negatively-skewed distribution ( )

(c) symmetrical distribution ( )

(d) moderately-skewed distribution ( )

3. The value of probability varies between

(a) −1 and +1 ( )

(b) −1 and +2 ( )

(c) 1 and 10 ( )

(d) 0 and 1 ( )

4. The variance of a binomial distribution can be expressed as

(a) pq^n ( )

(b) npq ( )

(c) $nq^{n-1} \cdot p$ ( )

(d) pqr ( )

5. The expression $\frac{\Sigma xy}{n} - \bar{x}\,\bar{y}$ refers to

(a) explained variation ( )

(b) unexplained variation ( )

(c) covariance ( )

(d) correlation coefficient ( )

6. The range of coefficient of determination (R^2) is

(a) 0 and 1 ( )

(b) –1 and 0 ( )

(c) –1 and +1 ( )

(d) None of the above ( )

7. Which of the following is not a component of time series?

(a) Regular variations ( )

(b) Seasonal variations ( )

(c) Cyclical variations ( )

(d) Irregular variations ( )

8. Which of the following is an ideal index number?

(a) Paasche's index number ( )

(b) Laspeyres' index number ( )

(c) Marshall-Edgeworth index number ( )

(d) Fisher's index number ( )

9. Crude Birth Rate (CBR) is the ratio of number of life births during a year to the

(a) mid-year population ( )

(b) total number of births in a year ( )

(c) total number of women ( )

(d) total number of married woman ( )

10. If IMR = 20 per 1000 and the total number of life births is 200 in a year, the number of infants dying before attaining age one is

(a) 4 ( )

(b) 10 ( )

(c) 2 ( )

(d) 5 ( )

SECTION—B

(*Marks* : 15)

Answer the following questions : 3×5=15

1. Explain the meaning of kurtosis.

2. Explain the meaning of mutually exclusive events.

3. Explain the concept of coefficient of determination.

4. Explain the time reversal test for index number.

5. What is Net Reproduction Rate (NRR)?

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