Subject Code : ECO/VI/10

Booklet No. A 234

05 MAY 2017

ECO/VI/10

2017

(6th Semester)

ECONOMICS

TENTH PAPER

(Quantitative Techniques—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. *(a)* What do you mean by central tendency? 3

(b) Compute the mode from the following data : 7

Size	*Frequency*
90–100	10
100–110	37
110–120	65
120–130	80
130–140	51
140–150	35
150–160	18
160–170	4

2. An analysis of the monthly wages paid to workers in two firms *A* and *B*, belonging to the same industry, gives the following results :

	Firm A	*Firm B*
No. of wage earners	105	100
Average monthly wages	210	200
Standard deviation	10	11

Find—

(a) in which firm *A* or *B* is there greater variability in individual wages;

(b) combined mean;

(c) combined standard deviation. 2+3+5=10

UNIT—II

3. Discuss the properties of Poisson distribution. 10

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

(b) A bag contains 5 white and 10 red balls. Three balls are drawn at random. Find the probability that all the three balls are red. 4

UNIT—III

5. Calculate the coefficient of rank correlation between *X* and *Y* :

X	36	56	20	65	42	33	44
Y	50	35	70	25	58	75	60

Comment on the relation between *X* and *Y* series. 8+2=10

6. Construct two regression equations and estimate the value of *Y* when *X* = 10 by using the following data : 8+2=10

	X	*Y*
Mean	35	40
Standard deviation	6	8

Correlation coefficient between *X* and *Y* is 0·8.

UNIT—IV

7. What is index number? Calculate Fisher's ideal index for the following data and show that it satisfies the time-reversal test : 2+4+4=10

	Base Year		*Current Year*	
Item	*Quantity*	*Price*	*Quantity*	*Price*
A	5	5	6	30
B	4	8	5	10
C	3	12	4	8
D	8	4	7	12

8. Fit a straight line trend by least square method. Also estimate the likely production for the year 2017. 8+2=10

Year	*Production* (in tonnes)
2008	24
2009	25
2010	29
2011	26
2012	22
2013	24

UNIT—V

9. Compute the crude and standardised death rates in two cities from the following data and find out which population is healthier: 4+4+2=10

Age	*City A*		*City B*	
	Population	*Death*	*Population*	*Death*
0–5	15000	400	20000	420
5–40	20000	300	30000	450
above 40	10000	240	15000	300

10. Write short notes on 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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To be filled in by the Candi

DEGREE 6th Semester
(Arts / Science / Commerce
.....) Exam., 201

Subject .....
Paper .....

INSTRUCTIONS TO CANDIDAT

1. **The Booklet No. of this script sh quoted in the answer script me descriptive type questions an versa.**
2. **This paper should be ANSWERED and submitted within 1 (one of the commencement o Examination.**
3. **While answering the questions booklet, any cutting, erasing, writing or furnishing more th answer is prohibited. Any roug if required, should be done o the main Answer Book. Instr given in each question sho followed for answering that q only.**

Signature of Scrutiniser(s) *Sign Exa*

2017

(6th Semester)

ECONOMICS

TENTH PAPER

(Quantitative Techniques—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. 3 Median is equal to

(a) 2 Mean ( )

(b) 2 Mean – Mode ( )

(c) 2 Mean + Mode ( )

2. In a positively skewed distribution

(a) Mean > Median > Mode ( )

(b) Mean < Median < Mode ( )

(c) Mean = Median = Mode ( )

3. In probability theories, events which can never occur together are classified as

(a) collectively exclusive events ( )

(b) mutually exclusive events ( )

(c) independent events ( )

4. The mean of a binomial distribution is given by

(a) np ( )

(b) npq ( )

(c) $\sqrt{npq}$ ( )

5. Corelation between income and demand is

(a) zero ( )

(b) positive ( )

(c) negative ( )

6. The two regression lines intersect each other at the point

(a) (X,Y) ( )

(b) $(0,0)$ ( )

(c) $(\overline{X},\overline{Y})$ ( )

7. Laspeyres' index formula uses the weight of the

(a) base year ( )

(b) current year ( )

(c) None of the above ( )

8. P_0 indicates

(a) price of the base year ( )

(b) price of the current year ( )

(c) price of the last year ( )

9. The value of NRR > 1 will result into

(a) increase in population ( )

(b) reduction in population ( )

(c) constancy in population ( )

10. Theoretically the net production rate can range from

(a) 0–5 ( )

(b) 8–15 ( )

(c) 15–20 ( )

SECTION—B

(*Marks* : 15)

Answer the following questions : 3×5=15

1. Define primary and secondary data.

2. What is meant by independent events?

3. What is multiple correlation?

4. What are the various methods used for determining trend?

5. The mid-year population and number of birth registered for town *A* are 30000 and 750 respectively. Calculate the crude birthrate.

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