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(FYUGP)

(3rd Semester)

ECONOMICS

Paper Code : ECO3/SEC–3
(Methods of Data Analysis)

Full Marks : 37.5   *Pass Marks* : 40%

Time : 2 hours

(PART : B – DESCRIPTIVES)

(*Marks* : 25)

The questions are of equal value

Answer *any five* from the following taking at least one question from each unit   (5x5 = 25)

Unit – I

1. Bring out the comparative advantages and difference between Census survey and Sample survey.

2. Explain the various methods of random sampling.

Unit – II

3. From the following data calculate the arithmetic mean by step deviation method:

Marks	0-4	4-8	8-12	12-16
Frequency	6	8	2	1

4. Find out Mode from the following frequency distribution:

Mid points	1	2	3	4	5	6
Frequency	8	6	10	12	20	12

Unit – III

5. The following table gives the aptitude test score and productivity index of 10 workers selected at random. Calculate the two regression equations. Estimate productivity index of a worker whose test score is 90 and the test score whose productivity index is 70.

Aptitude Test score	60	62	65	70	72	48	53	73	65	82
Productivity Index	68	60	62	80	85	40	52	62	60	81

6. In the following data distribution of population in a city and those who have heart disease are given. Find out if there is any relationship between age and heart disease.

Age	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of persons (in '000)	100	60	40	36	24	11	6	5
Persons with heart disease	55	40	40	40	36	22	18	15

(3)

7. A bag contains 5 white and 8 red balls. Two drawings of 3 balls are made such that (a) the balls are replaced before the second trial; (b) the balls are not replaced before the second trial. Find the probability that the first drawing will give 3 white and the second 3 red balls in each case.

8. A box contains 3 red and 7 white balls. One ball is drawn at random and in its place a ball of the other colour is put in the box. Now one ball is again drawn at random from the box. Find the probability that it is red.

Unit – V

9. Calculate the index number by taking 1989 and 1996 as base periods for the following data

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997
Price of Commodity	40	50	60	70	80	100	90	100	110

10. From the following prices of 3 groups of commodities for the years 2003 to 2007. Find the chain base index numbers chained to 2003

Groups	2003	2004	2005	2006	2007
I	4	6	8	10	12
II	16	20	24	30	36
III	8	10	16	20	24

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ECONOMICS

(SEC)

Paper Code : ECO3.SEC-3

(Methods of Data Analysis)

(PART : A—OBJECTIVES)

(Marks : 12.5)

SECTION—I

(Marks : 7.5)

The figures in the margin indicate full marks for the questions

Choose the correct answer and put a Tick (✓) mark against the brackets provided :   15 x 0.5 = 7.5

1. The data collection through ……………........ method is used for economic planning of a country.

    (a) sample   (   )

    (b) primary   (   )

    (c) census   (   )

    (d) secondary   (   )

2. When investigator select samples which he thinks are the most typical of the population with regard to the characteristics under consideration, it is a case of .... sampling.

(a) convenience   ( )

(b) cluster   ( )

(c) judgement   ( )

(d) quota   ( )

3. The one who helps the investigator in the collection of information or data is called .... and the one from whom the investigator collects information is called ....

(a) informants, sample size   ( )

(b) enumerator, respondents.   ( )

(c) informants, respondents.   ( )

(d) enumerator, population   ( )

4. Class intervals of : $-5, -10, -15, -20$, is a case of .... method with only ..... limit

(a) inclusive, upper   ( )

(b) exclusive, lower   ( )

(c) exclusive, upper   ( )

(d) inclusive, lower   ( )

5. Rectangles, squares, circles or pie-diagrams are .... dimensional diagrams.

   (a) One-   ( )

   (b) Two-   ( )

   (c) Three-   ( )

   (d) Four-   ( )

6. .... variables are exact or finite and are not normally fractions.

   (a) Individual   ( )

   (b) Discrete   ( )

   (c) Continuous   ( )

   (d) All the above   ( )

7. Correlation can be used as

   (a) a cause   ( )

   (b) an effect   ( )

   (c) both cause and effect   ( )

   (d) none of the above   ( )

8. If in response to a unit change in the value of one variable, there is a constant change in the value of the other variable.

   (a) linear correlation   ( )

   (b) non-linear correlation   ( )

   (c) simple correlation   ( )

   (d) partial correlation   ( )

9. Independent of change of scale but not or origin

   (a) correlation ( )

   (b) regression ( )

   (c) both a & b ( )

   (d) none of the above ( )

10. Regression and correlation have

    (a) the same sign ( )

    (b) opposite sign ( )

    (c) both a & b ( )

    (d) none of the above ( )

11. Measuring differences in the magnitude of a group of related variables

    (a) probability ( )

    (b) time series ( )

    (c) index numbers ( )

    (d) correlation ( )

12. Forecasting long term activity can be done using

    (a) regression ( )

    (b) index numbers ( )

    (c) logic ( )

    (d) probability ( )

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13. Subjective approach to probability was introduced by

   (a) Fisher   ( )

   (b) Pigou   ( )

   (c) Frank Ramsey   ( )

   (d) Samuelson   ( )

14. Axiomatic Approach to probability was introduced by A.N. Kolmogorov in

   (a) 1947   ( )

   (b) 153   ( )

   (c) 1933   ( )

   (d) 1912   ( )

15. Probability of the happening or not happening of a particular event is considered

   (a) compound event   ( )

   (b) dependent event   ( )

   (c) complimentary event   ( )

   (d) simple event   ( )

SECTION–II

(Marks : 5)

Give short answer (any five)   1 X 5 = 5

1. Difference between primary and secondary data.

2. Difference between quantitative and qualitative data.

3. Prepare a frequency distribution from the following data by inclusive method taking 4 as the class interval:

   20 10 21 11 19 16 18 12 15 16 18 20 16 14 21 10 20 13

4. Represent the given data with the help of simple bar diagram

Commodity	Production in tonnes
Wheat	3260
Rice	1850
Tea	5000

5. Differentiate between correlaton and regression.

6. State two properties of regression coefficient.

7. Define index numbers.

8. State the steps in construction of chain index.

9. What is classical probability?

10. Define relative frequency theory of probability.

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