2023

(FYUGP)

(3rd Semester)

ECONOMICS

Paper Code : EC3.SEC-1

(Methods of Data Analyses)

Full Marks : 37.5
Pass Marks : 40%

Time: 2 Hours

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

PART A: OBJECTIVE

I. Choose the correct answer from the given options. (½x15=7½)

1. In sampling, the universe may be:
   a) Finite
   b) Infinite
   c) Either finite or infinite
   d) None of the above

2. In a census method, datas are obtained from
   a) A part of the population
   b) Every unit of the population
   c) Both (a) and (b)
   d) None of the above

3. In an indirect oral interview, the investigator contacts the
   a) Third party
   b) Respondent
   c) Correspondent
   d) Both (b) and (c)

4. In a negatively skewed distribution
   a) The value of mean is maximum
   b) The value of mean is least
   c) The value of mean is zero
   d) Mean is equal to mode

5. A curve which is less peaked than the normal curve is referred to as
   a) Mesokurtic
   b) Platykurtic
   c) Leptokurtic
   d) None of the above

6. The mean which is based on the reciprocals of numbers averaged is referred to as
   a) Arithmetic mean
   b) Geometric mean
   c) Harmonic mean
   d) None of the above

7. The coefficient of correlation lies between
   a) 0 and +1
   b) -1 and +1
   c) -1 and 0
   d) -0.5 and +0.5

8. Regression equation of Y on X is expressed as:
   a) X= a + by
   b) Y=a + bx
   c) Y= a+bx+cx2
   d) None of the above

9. A random variable is also known as
   a) Continuous variable
   b) Chance variable
   c) Stochastic variable
   d) Both (b) and (c)

10. In the general form of a binomial distribution, 'r' stands for
   a) No of trials
   b) No of successes in n trials
   c) Probability of success in a trial
   d) 1-p

(Continued)

11. If A and B are mutually exclusive events, then
    a) P(AB) = 1
    b) P(AB) = 0
    c) P(AB) = 0.5
    d) None of the above

12. The difference between the value of the smallest and largest item in a distribution is called
    a) Median
    b) Mode
    c) Range
    d) Mean

13. Index for base period is taken as
    a) 0
    b) 100
    c) 200
    d) 150

14. In Paasche's price index method, 'po' stands for
    a) Base year price
    b) Current year price
    c) Base year weights
    d) Current year weights

15. If both variables vary in the same direction it is called
    a) Negative correlation
    b) Positive correlation
    c) Partial correlation
    d) Multiple correlation

II. Write short notes on any five of the following: (1x5=5)

1. Define random sampling.
2. Define geometric mean.
3. What is a sample space?
4. Define regression.
5. What are quantity index numbers?
6. What is a univariate frequency distribution?
7. What are independent events?
8. State one use of index numbers.
9. Define mode.
10. Define standard deviation.

PART B: DESCRIPTIVE

*Answer any **five** questions taking one from each unit*

1. a) Explain the different methods of restricted random sampling. 5

Or

b) Define primary data. Discuss the methods of collecting primary data. (1+4=5)

2. a) Find the median and mean deviation of the following data: 5

Size	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	7	12	18	25	16	14	8

Or

b) Calculate Bowley's coefficient of skewness for the following frequency distribution. 5

Variable	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	12	16	26	38	22	15	7	4

3. a) Calculate Karl Pearson's coefficient of correlation from the following data: 5

Roll no of students	1	2	3	4	5
Marks in accounts	48	35	17	23	47
Marks in statistics	45	20	40	25	45

Or

b) Calculate Spearman's rank correlation between marks assigned to ten students by judges **X** and **Y** in a certain competitive test as shown below: 5

(Continued)

Sl. No	1	2	3	4	5	6	7	8	9	10
Marks by judge X	52	53	42	60	45	41	37	38	25	27
Marks by judge y	65	68	43	38	77	48	35	30	25	50

4. a) Define conditional probability. Find the probability of drawing a queen, a king and a knave in that order from a pack of cards in three consecutive draws, the cards not being replaced. 1+4=5

Or

b) A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the number of the ball drawn will be a multiple of

(i) 5 or 7, and

(ii) 3 or 7 5

5. a) Construct index numbers of price from the following data by applying Laspeyre's method: 5

Commodity	2005		2006	
	Price	Qty	Price	Qty
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

Or

b) Compute by Fisher's index formula, the quantity index from the data given below: 5

Commodity	Base year		Current year	
	Price	Total value	Price	Total value
A	10	100	8	96
B	16	96	14	98
C	12	36	10	40

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