

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Com. DEGREE EXAMINATION – CORPORATE SECRETARYSHIP

FIRST SEMESTER – NOVEMBER 2018

18UST1AL02 – FUNDAMENTALS OF STATISTICS

Date: 31-10-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART – A

ANSWER ALL THE QUESTIONS

(10 X 2 = 20)

1. Define Sampling and mention the types of sampling.
2. Explain the difference between primary and secondary data.
3. Write short note on histogram.
4. State the demerits of median.
5. Define Skewness.
6. Find the range and its coefficient from the following: 12, 8, 9, 10, 4, 14, 15.
7. Write any two properties of Regression coefficients.
8. What is positive and negative correlation?
9. What are the components of a Time Series?
10. State any two uses of index numbers.

PART – B

ANSWER ANY FIVE QUESTIONS

(5 X 8 = 40)

11. Explain the importance and scope of Statistics.
12. Draw a pie chart to represent the following cost data of the company Beta Ltd.

| Particulars | Rs. (in thousands) |
|--------------|--------------------|
| Raw Material | 500 |
| Labour | 306 |
| Overheads | 194 |

13. Compute quartile deviation and coefficient of quartile deviation from the following data:

| | | | | | | |
|-----------------|----|----|----|----|----|----|
| Marks | 10 | 20 | 30 | 40 | 50 | 60 |
| No. of students | 4 | 7 | 15 | 8 | 7 | 2 |

14. Calculate the correlation coefficient for the following data:

| | | | | | | | | | | |
|------------------------------|----|----|----|----|----|----|----|----|----|----|
| Advertisement: (Cost Rs.000) | 39 | 65 | 62 | 90 | 82 | 75 | 25 | 98 | 36 | 78 |
| Sales: (Rs. in lakhs) | 47 | 53 | 58 | 86 | 62 | 68 | 60 | 91 | 51 | 84 |

15. Explain the difference between correlation and regression.
16. From the following data construct an index for 2014 taking 2013 as base by the average of relatives method using (a). Arithmetic mean and (b). Geometric mean for averaging relatives.

| Commodities: | A | B | C | D | E |
|---------------------|----|----|----|-----|----|
| Price in 2013 (Rs.) | 50 | 40 | 80 | 110 | 20 |
| Price in 2014 (Rs.) | 70 | 60 | 90 | 120 | 20 |

17. Explain briefly the components of time series.
18. Calculate mean, median and mode for the given continuous data:

| | | | | | |
|----|------|-------|-------|-------|--------|
| X: | 0-20 | 20-40 | 40-60 | 60-80 | 80-100 |
| f: | 8 | 12 | 30 | 20 | 10 |

PART – C

ANSWER ANY TWO QUESTIONS

(2 X 20 = 40)

19. a). Draw a histogram and frequency curve for the following data.

| | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|
| Age (in years) | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of persons | 5 | 12 | 19 | 21 | 18 | 10 | 4 |

b). Compute mean deviation about median and its coefficient of the following:

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

20. a). Calculate Bowley's coefficient of skewness for the following data:

| | | | | | | | | |
|------------------------|------|-------|-------|-------|-------|-------|-------|-------|
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of students | 5 | 8 | 7 | 12 | 28 | 20 | 10 | 10 |

b). The ranks of 10 students A and B in 10 examinations are given below. Find the rank correlation between A and B

| | | | | | | | | | | |
|----------|----|---|---|---|---|---|---|---|---|----|
| A | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| B | 10 | 8 | 7 | 9 | 6 | 2 | 4 | 3 | 5 | 1 |

21. a). From the following data obtain the two regression equations:

| | | | | | |
|----------|---|----|----|---|---|
| X | 6 | 2 | 10 | 4 | 8 |
| Y | 9 | 11 | 5 | 8 | 7 |

b). The following data refer to the production of cloth in million yards during 2002-2012. Compute the five yearly moving averages.

| | | | | | | | | | | | |
|-------------------|------|------|------|------|------|------|------|------|------|------|------|
| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Production | 50 | 36 | 43 | 45 | 38 | 38 | 33 | 42 | 44 | 34 | 38 |

22. Calculate the price index number by

- (a). Laspeyres method (b). Paasche's method (c). Bowley's method
 (d). Fisher's Ideal formula (e). Marshall-Edge worth's method.

| Commodity | 2012 | | 2013 | |
|-----------|-------------|------------------|-------------|------------------|
| | Price (Rs.) | Quantity (in kg) | Price (Rs.) | Quantity (in kg) |
| A | 20 | 8 | 40 | 6 |
| B | 50 | 10 | 60 | 5 |
| C | 40 | 15 | 50 | 10 |
| D | 20 | 20 | 20 | 50 |
