

**BACHELOR OF SCIENCE (CBCS-2018 COURSE)**  
**F. Y. B. Sc. Sem-I : WINTER :- 2021**  
**SUBJECT: STATISTICS : DESCRIPTIVE STATISTICS-I**

Day : Tuesday  
Date 1/2/2022

W-18310-2021

Time : 10:00 AM-01:00 PM  
Max. Marks: 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of statistical tables and **CALCULATOR** is allowed.

**Q.1** Attempt **ANY TWO** of the following: **[12]**

- a) Describe simple random sampling method with its types.
- b) Calculate mean, mode and median for the following data:  
10, 14, 8, 12, 20, 22, 15, 9, 11.
- c) Compute range and quartile deviation with their coefficients for the following data:  
12, 18, 15, 09, 10, 12, 17, 08, 12.

**Q.2** Attempt **ANY TWO** of the following: **[12]**

- a) Write a note on inclusive and exclusive method of classification.
- b) Compute less than cumulative frequency distribution and find  $Q_1$  and  $Q_2$  for following distribution

X	8	10	12	14	16	18
f	2	5	7	12	3	1

- c) Compute first three raw moments and hence compute first three central moments for the following data:  
8, 4, 2, 6, 10.

**Q.3** Attempt **ANY TWO** of the following: **[12]**

- a) Obtain remaining class frequencies related to two attributes using following data:  
 $N = 100$ ,  $(A) = 25$ ,  $(B) = 15$ ,  $(AB) = 20$ .  
Also verify independence of two attributes.
- b) The daily expenditure of 100 families on transport is given below:

Expenditure (₹)	0 – 30	30 – 40	40 – 50	50 – 60	60 – 70
No. of families	12	18	27	13	10

Compute mode and median expenditure for above data:

- c) Compute standard deviation and coefficient of variation for the following frequency distribution:

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	2	5	8	4	1

**P.T.O.**

**Q.4** Attempt **ANY THREE** of the following: **[12]**

- a) State formulae based on moments to measure skewness and kurtosis.
- b) What is dispersion? State various measures of it.
- c) Compute Harmonic mean for the following data:  
12, 18, 15, 09, 10, 12, 17, 09, 11, 12.
- d) Compute Yule's coefficient of association (Q) using following information:

Sex	Educational level	
	Secondary	Graduate
Male	10	80
Female	80	15

Comment on your findings.

**Q.5** Attempt **ANY FOUR** of the following: **[12]**

- a) Define central moments for ungrouped data. State effect of change of origin and scale on central moments.
- b) State formulae for combined mean and combined variance of two groups.
- c) In a certain frequency distribution the sum of upper and lower quartiles is 45 and the difference between them is 15. If the median is 20, find the coefficient of skewness.
- d) Compute geometric mean for the following data:  
8, 4, 2, 6, 10.
- e) Check whether following data is consistent or not:  
 $N = 100$ ,  $(A) = 25$ ,  $(B) = 15$ ,  $(A\beta) = 10$ ,  $(AB) = 70$ .
- f) Describe scope of statistics in field of economics.

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