

F.Y.B.SC. SEM – I (CBCS - 2016 Course) : WINTER - 2018

SUBJECT : STATISTICS: DESCRIPTIVE STATISTICS – I

Day : Saturday
Date : 20/10/2018

W-2018-0686

Time : 11.00 A.M TO 02.00 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 A) Choose correct alternative for: [06]

- i) Mean of 10 values is 45. If two values 18 and 12 are added in the group then new mean is:
a) 40 b) 45 c) 15 d) 30
- ii) Variance of 10 values is 4, if each value in respective data is doubled then variance of new data set is:
a) 4 b) 5 c) 20 d) 16
- iii) Which of the following is a measure of dispersion?
a) Variance b) Mean c) Mode d) Median
- iv) Geometric mean of 3, 0, 9 is:
a) 27 b) 3 c) 9 d) Zero
- v) For symmetric distribution, 3rd central moment is:
a) Standard deviation c) Zero
b) Variance d) Range
- vi) Total number of class frequencies for three attributes is:
a) 4 b) 8 c) 5 d) 2

B) State whether the following statements are true or false: [06]

- i) Income of family is quantitative characteristics (variable).
- ii) A value with maximum repetition in a data is median.
- iii) The peakedness of frequency distribution is measured as skewness.
- iv) Third central moment of symmetric distribution is zero.
- v) Bowley's coefficient of skewness lies between -1 to +1.
- vi) Mean is affected by change of origin and scale.

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

- a) Describe the term 'Population' and 'Sample'.
- b) Calculate mean, mode and median for the following data:
10, 14, 8, 12, 20, 22, 15, 9, 11.
- c) Compute range and coefficient of range for the following data:
12, 18, 15, 09, 10, 12, 17, 08, 12.
- d) Check consistency of following data related to attribute A and B:
N = 100, (B) = 35, (AB) = 45.

P.T.O.

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

- a) Define raw and central moments for ungrouped data.
- b) Write a note on Exclusive method of classification.
- c) Compute the third quartile for the following distribution:

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

- d) Compute first two raw moments for the following data:
8, 4, 2, 6, 10, 9, 7, 5, 3.
- e) Obtain remaining class frequencies related to two attribute using following data:
 $N = 100$, $(A) = 25$, $(B) = 15$, $(AB) = 20$.

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

- a) Define skewness and kurtosis and state formulae based on moments to measure skewness and kurtosis.
- b) The daily expenditure of 100 families on transport is given below:

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

Compute mean expenditure for above data.

- c) Compute Yule's coefficient of association (Q) using following information:

Sex	Educational level	
	Secondary	Graduate
Male	10	80
Female	80	15

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

- a) What is Dispersion? State various measures of it.
- b) Obtain first three raw moments for the following data. Hence or otherwise obtain first three central moments.

X	2	5	8	10	12
f	1	4	5	3	2

- c) Compute third quartile and seventh decile for the following data:

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

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