

F.Y.B.SC. SEM – I (CBCS - 2016 COURSE) : SUMMER - 2018

SUBJECT : STATISTICS : DESCRIPTIVE STATISTICS – I

Day : Monday
Date : 23/04/2018

S-2018-0625

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 **CALCULATORS** is allowed.

Q.1 A) Choose correct alternative for: [06]

- i) Which of the following is an example of qualitative characteristics?
 - a) Weight
 - b) Income
 - c) Expenditure
 - d) Sex
- ii) Which of the following is not a measure of Dispersion?
 - a) Mean
 - b) Standard Deviation
 - c) Mean Deviation
 - d) Range
- iii) The arithmetic mean of first n natural numbers is _____.
 - a) $\frac{n(n+1)}{2}$
 - b) $\frac{n}{2}$
 - c) $\frac{n+1}{2}$
 - d) $\frac{(n^2+1)}{2}$
- iv) The mean and variance of a distribution are 50 and 16 respectively, the coefficient of variation is _____.
 - a) 8%
 - b) 80%
 - c) 6.25%
 - d) None of these
- v) A measure of dispersion which is independent of units is
 - a) Range
 - b) Mean Deviation
 - c) Coefficient of variation
 - d) Standard Deviation
- vi) If first order moment about 5 is 2 then mean is equal to _____.
 - a) 5
 - b) 2
 - c) 7
 - d) None of these

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

- i) Bowley's coefficient of skewness cannot be calculated for open end class interval.
- ii) The first central moment is always equal to zero.
- iii) If $Q < 0$ then the attributes are negatively associated.
- iv) (α) , $(\alpha\beta)$ and $(\alpha\beta\gamma)$ are interpreted as positive class frequencies.
- v) Primary data are more accurate than secondary data.
- vi) Sampling method is useful to collect only primary data.

P.T.O.

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

- a) Explain the terms population and sample.
- b) The daily expenditure of 100 families is given below:

Expenditure	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79
No. of families	14	23	27	21	15

Compute median.

- c) The first three moments about the value 5 are 1, 16 and 40 respectively. Find mean, standard deviation and third central moment.
- d) Define quartiles and deciles and state the formula for each in case of frequency distribution.

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

- a) For a group of 10 items $\Sigma x = 452$, $\Sigma x^2 = 24270$ and mode = 43.7. Find the Karl Pearson's coefficient of skewness.
- b) Coefficient of variation of two series are 75% and 90% and their standard deviations 15 and 18 respectively. Find their means.
- c) Find the mean and mode of the following observations:
71, 72, 73, 71, 73, 74, 73, 70, 75, 73.
- d) Is the following information consistent?
 $(\alpha) = 70$, $(\beta) = 20$, $(\alpha\beta) = 30$, $N = 100$.
- e) Discuss the scope of statistics in the field of economics.

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

- a) Define Kurtosis and explain types of Kurtosis.
- b) Find the quartile deviation and coefficient of quartile deviation for the following frequency distribution:

X	2	4	6	8	10
f	5	10	15	13	7

- c) Given that : $(AB) = 150$, $(A\beta) = 50$, $(\alpha B) = 60$, $(\alpha\beta) = 250$. Find remaining class frequencies. Also find coefficient of association (Q) between attributes A and B.

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

- a) Discuss merits and demerits of geometric mean and harmonic mean.
- b) Draw the histogram for the following data. Also find mode graphically.

Marks	60 – 70	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120
No. of students	21	37	51	49	21	13

- c) Find combined S.D. from the following data:

	Group A	Group B
Size	100	250
Mean	50	60
S.D.	10	12

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