

F.Y.B.Sc. SEM – I (CBCS 2018 COURSE) : WINTER - 2018

SUBJECT : STATISTICS : DESCRIPTIVE STATISTICS – I

Day : Wednesday
Date : 17/10/2018

W-2018-0671

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 Attempt **ANY TWO** of the following: [12]

- a) Describe the procedure of stratified random sampling.
- b) Define classification and explain different types of classification.
- c) Compute the mode and median for the following data:

Class	15 – 20	20 – 25	25 – 30	30 – 35	35 – 40
f	15	32	30	33	20

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

- a) What is measure of central tendency? State the requirement of an ideal measure of central tendency.
- b) Find mean and standard deviation of first 'n' natural numbers.
- c) Calculate the quartile deviation and coefficient of quartile deviation for the following frequency distribution:

Class	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
f	05	12	32	40	11

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

- a) Define skewness. Explain different types of skewness. State any two measures of skewness.
- b) If $\mu_1^1 = 1$, $\mu_2^1 = 4$, $\mu_3^1 = 10$, $\mu_4^1 = 46$. Compute first four central moments. Also find γ_1 and γ_2 and interpret the result.
- c) If $N = 73$, $(A) = 33$, $(B) = 28$, $(AB) = 15$, find remaining class frequencies. Also find coefficient of association (Q_{AB}).

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

- a) The first three moments about the value '5' are 1, 16 and 40 respectively. Find mean, variance and third central moment.
- b) Define geometric mean and harmonic mean.

P.T.O.

- c) For a group of 10 items $\sum x = 452$, $\sum x^2 = 24270$ and mode = 43.7. Find the Pearson's coefficient of skewness.
- d) Test whether the attributes A and B are independent, given that $(AB) = 10$, $(A\bar{B}) = 30$, $(\bar{A}B) = 40$, $(\bar{A}\bar{B}) = 120$.

Q.5 Attempt **ANY FOUR** of the following:

[12]

- a) Describe in short scope of statistics in industry.
- b) 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.
- c) Prepare the usual frequency distribution for the following

Income more than ₹	500	1000	1500	2000	2500	3000
No. of persons	100	96	92	59	28	2

- d) Explain the following:
- i) Positive attribute ii) Order of class frequency
- e) Compute the range and coefficient of range for the following data:
100, 24, 14, 105, 21, 35, 106, 72, 38, 103, 61, 90, 20.
- f) Explain graphical method of determination of mode.

* * * *