F.Y.B.SC. SEM – I (CBCS - 2016 COURSE) : WINTER - 2017

SUBJECT : STATISTICS : DESCRIPTIVE STATISTICS – I

Day : **Friday**
Date : **03/11/2017**

W-2017-0547

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 quantitative characteristics?
- **a)** Height
- **b)** Sex
- **c)** Employment
- **d)** Blood group

ii) Which one of the following cannot be found when terminal classes are open end?
- **a)** Mode
- **b)** Median
- **c)** Mean
- **d)** None of these

iii) Mode is _____.
- **a)** Middle most value
- **b)** The minimum value
- **c)** Most frequent value
- **d)** The maximum value

iv) What is the value of range for: 25, 70, 56, 60, 90, 75
- **a)** 65
- **b)** 75
- **c)** 85
- **d)** 55

v) The mean and variance of a distribution are 80 and 25 respectively, the coefficient of variation is _____.
- **a)** 2.5%
- **b)** 12.5%
- **c)** 3.125%
- **d)** 6.25%

vi) If $\mu_2^1 = 20$ and $\mu_1^1 = 2$, then variance is equal to _____.
- **a)** 18
- **b)** 16
- **c)** 20
- **d)** 12

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

i) The sum of all highest order class frequencies for three attributes is equal to N.

ii) For two attributes A and B there are in all six ultimate class frequencies.

iii) The first central moment is zero only if the distribution is symmetrical.

iv) If coefficient of skewness γ_1 is positive the distribution is positively skewed.

v) Samples drawn by SRSWOR are distinct.

vi) The class widths of frequency distribution are equal.

P.T.O.

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

a) Explain the procedure of simple random sampling.

b) Given $\mu_1^1 = 1$, $\mu_2^1 = 5$, $\mu_3^1 = 20$. Find β_1 and γ_1 and interpret it.

c) Compute the median from the following data:

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

d) Define geometric mean and harmonic mean and state the formula for each in case of ungrouped data.

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

a) In a certain frequency distribution the sum of upper and lower quartile is 45 and the difference between them is 15. If the median is 20, find the Bowley's coefficient of skewness.

b) Is the following information consistant?
(A)= 30, (B) = 40, (AB) = 35, N = 100.

c) Find the mean and mode of the following observations:
81, 82, 83, 82, 83, 82, 84, 82, 80, 85.

d) Find the range and coefficient of range for the following data:
12, 18, 15, 20, 16.

e) Discuss the scope of statistics in the field of Industry.

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

a) Define skewness and explain types of skewness.

b) Given that N = 100, (A) = 35, (B) = 75, (AB) = 20. Find Yule's coefficient of Association (Q) between A and B.

c) Calculate quartile deviation and coefficient of quartile deviation for the following frequency distribution:

X	5	6	7	8	9	10
f	7	4	14	8	2	3

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

a) Define classification. Distinguish between inclusive and exclusive method of classification with one illustration each.

b) Two samples of sizes 40 and 50 have the same mean and standard deviations 20 and 10 respectively. Find the variance of the combined group.

c) Mean daily salary of 50 employees in a firm is ₹ 188.40. Frequency distribution of salaries of these employees in which some frequencies are missing is given below:

Salary	140 – 160	160 – 180	180 – 200	200 – 220	220 – 240
Frequency	6	--	17	--	5

Find the missing frequencies.

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