K – 52

Seat No.	

B.C.S. (Part – I) Examination, 2010
STATISTICS (Paper – I)
Descriptive Statistics (New Course)

Day and Date : Saturday, 17-4-2010 Total Marks : 100
Time : 3.00 p.m. to 6.00 p.m.

Instructions : *1) Answer to the two Sections should be written in one answer book.*
*2) All questions are **compulsory**.*
*3) Figures to the right in the bracket indicate **full marks**.*
*4) Use of calculators and statistical tables is **allowed**.*

SECTION – I

(10)

1. Choose the correct alternative.

i) The measure of location that can be located from cumulative frequency curve is _____.
a) mode b) median
c) quartile deviation d) mean

ii) In _____ each and every unit in the population has equal chance of being selected in the sample.
a) Systematic sampling b) Simple random sampling
c) Stratified random sampling d) None of these

iii) The mean of first 'n' natural numbers is _____.
a) $\frac{(n+1)}{2}$ b) $n(n+1)$ c) $\frac{(n+1)^2}{4}$ d) $\frac{n(n+1)}{2}$

iv) The second quartile is always _____.
a) mean b) mode c) median d) upper quartile

v) A distribution of 8 scores has a median 31. If the highest score increases by 3 points, the median will be _____.
a) 31 b) 31.5
c) 32 d) cannot be determined

P.T.O.

vi) If each observation of a set is divided by 5, the s.d. of new observations is _____.

a) $(1/5)^{th}$ of sd of original observation

b) $(1/25)^{th}$ of sd of original observations

c) 5 times the sd of original observations

d) none of these

vii) If each of the observation series is multiplied by constant c the C.V. as compared to original value is _____.

a) increased by c b) decreased by c

c) remained unchanged d) not determinable

viii) For the comparison of two different series, the best measure of dispersion is _____.

a) range b) s.d.

c) coefficient of range d) coefficient of variation

ix) The first order raw moment about origin is _____.

a) mean b) median c) mode d) s.d.

x) First order central moment for any data set is _____.

a) one b) zero c) variance d) s.d.

2. Attempt **any two** of the following **three.** **(10+10)**

i) What is the ogive curves ? How they are constructed ? Explain how they are used to locate the median ?

ii) Following table shows the distribution of 100 families according to their expenditures. Calculate the missing frequencies if a.m. is Rs. 25.

Expenditure (Rs.) :	0-10	10-20	20-30	30-40	40-50
No. of families :	14	–	27	–	15

iii) What is dispersion ? State the different types of dispersion. Discuss the effect of change of origin and scale on s.d.

3. Attempt **any four** of the following. **(5+5+5+5)**

i) Define, a) Population b) Sample.
State the advantages of sampling method over census method.

ii) The mean weight of 150 students in a certain class is 60 kg. The mean weight of boys in the class is 70 kgs and that of girls is 55 kgs. Find the number of boys and the number of girls in the class.

iii) Define mode. Enumerate its merits and demerits.

iv) Two samples of sizes 40 and 50 respectively have the same mean 50 but different sd 19 and 8 respectively. Find the combined sd of 90 observations.

v) Write a note on 'Sheppard's correction'.

vi) The first three moments of a distribution about 2 are 1, 22, 10. Find its variance and third central moment.

SECTION – II

4. Choose the correct alternative. **10**

i) The value of coefficient of skewness β_2 is _____.

a) less than 3

b) greater than 1

c) equal to 3

d) all the above

ii) For a symmetric distribution, the measure of skewness ν_1 is _____.

a) zero b) one c) positive d) negative

iii) The covariance between X and X itself is _____.

a) s.d. b) one c) variance d) zero

iv) If X and Y are independent variables then the correlation coefficient between X and Y is _____.

a) 1 b) 0 c) –1 d) none of these

v) If correlation coefficient between X and Y is 0.6, then correlation coefficient between $\frac{X}{2}$ and $\frac{Y}{2}$ is _____.

a) 0.6 b) 0.3 c) 0.15 d) 0

vi) If the data set on X and Y is (1, 6), (2, 7), (3, 8) then the correlation coefficient between X and Y is

a) 0 b) 1 c) –1 d) 0.5

vii) The range of regression coefficients is _____.

a) 0 to 1 b) –1 to 1 c) 0 to ∞ d) $-\infty$ to ∞

viii) If the two variables are independent, then the angle between the two lines of regression is _____.

a) 0° b) 45° c) 90° d) 180°

ix) The range for partial correlation coefficients is _____.

a) -1 to $+1$ b) 0 to 1 c) $-\infty$ to ∞ d) 0 to ∞

x) The multiple correlation coefficient $R_{1.23}$ is of order _____.

a) 1 b) 2 c) 3 d) 0

5. Attempt **any two** of the following **three**. **(10+10)**

i) Define product moment correlation coefficient. Interprete the cases a) $r = 0$ b) $r = +1$ c) $r = -1$. Also show that it lies between -1 to $+1$.

ii) Derive the two equations of lines of regression by least square method.

iii) If X_1, X_2 and X_3 are three variables with
$\sigma_1 = 3, \quad \sigma_2 = 4, \quad \sigma_3 = 5$
$r_{12} = 0.7, \quad r_{13} = 0.28, \quad r_{23} = 0.28$
then obtain a) $R_{1.23}$ b) $r_{12.3}$ c) $Var_{(X1.23)}$

6. Attempt **any four** of the following. **(5+5+5+5)**

i) Write a short note on Kurtosis.

ii) For a symmetric distribution, with usual notations, prove that,

$$\frac{\mu_3'}{\mu_1'} = 3\mu_2 + \mu_1'^2$$

iii) Given that : $r = 0.4$, $\Sigma XY = 108$, $\sigma_r = 3$ and $\Sigma X^2 = 900$ find the number of pairs of observations where X and Y denote deviations from their respective means.

iv) The following results were obtained from records of age (X) and systolic blood pressure (Y) of a group of 10 men.

	X	Y	
Mean	53	142	
Variance	130	165	and $\Sigma(X \cdot \bar{x})(Y \cdot \bar{y}) = 1220$

Find the appropriate regression equation and use it to estimate the blood pressure of a man with age 45 years.

v) In a trivariate data, $r_{12} = 0.7$, $r_{13} = -0.8$ and $r_{23} = 0.9$. Are these values consistent ?

vi) If all total correlation coefficients are equal, then show that all partial correlation coefficients are also equal.

W – 1003

Seat No.

B.C.S. (Part – I) (Semester – I) Examination, 2011
STATISTICS
Descriptive Statistics (Paper – I)

Day and Date : Monday, 16-5-2011
Time : 11.00 a.m. to 1.00 p.m.

Total Marks : 40

Instructions : *1) **All** questions are **compulsory**.*
*2) Figures to the **right** in the bracket indicate **full** marks.*
*3) **Use** of calculators and statistical tables is **allowed**.*

1. Choose the correct alternative : **(8)**

i) Frequency of a variable is always _____
a) in percentage b) a fraction
c) an integer d) none of these

ii) A measure of location that can be located from cumulative frequency curve is
a) mode b) median c) mean d) none of these

iii) _____ cannot be calculated for open-ended class intervals.
a) mean b) median c) mode d) none of these

iv) Second quartile divides the series in the ratio _____
a) 1 : 4 b) 1 : 2 c) 1 : 1 d) 2 : 1

v) If each value of a series of observations is divided by 5, its coefficient of variation is reduced by _____
a) 0% b) 5% c) 10% d) 20%

vi) The standard deviation of 5 observations with each value 'a' is _____
a) a b) $\sqrt{a}$ c) one d) zero

vii) For any frequency distribution, second order central moment is _____
a) mean b) one c) zero d) variance

viii) Which of the following is the correct expression ?
a) $\mu_3 = \mu_3^1 + 3\mu_2^1\mu_1^1 - \mu_1^13$ b) $\mu_3 = \mu_3^1 + 3\mu_2^1\mu_1^1 + 2\mu_1^13$
c) $\mu_3 = \mu_3^1 - 3\mu_2^1\mu_1^1 + 2\mu_1^13$ d) $\mu_3 = \mu_3^1 - 3\mu_2^1\mu_1^12 + 2\mu_1^13$

P.T.O.

2. Attempt **any two** of the following three : **(8+8)**

i) Describe the utility and scope of statistics with illustrations in the following fields :

a) Industry b) Economics

ii) Define range, variance and show that they are independent of change of origin.

iii) The following table shows the distribution of 100 families according to their expenditure per day. Number of families corresponding to the class-interval 10-20 and 30-40 are missing. The mode of the distribution is 24. Calculate the missing frequencies.

Expenditure per day (Rs.) :	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
No. of families :	14	–	27	–	15

3. Attempt **any four** of the following six : **(4+4+4+4)**

i) State the advantages of sampling method over census method.

ii) The mean salary of 96 workers of a firm was found to be Rs. 3,000. It was later discovered that the frequency of the class 2000-2200 was wrongly taken as 38 instead of 4z. Find the correct mean salary.

iii) Explain with an illustration :

a) Variable b) Attribute

iv) Two workers on the same job show the following results over a period of time :

	Workers	
	A	**B**
Mean time (minutes)	30	25
S.d. (minutes)	6	4

Who is more consistent in time in completing the job ?

v) Discuss the effect of change of origin and scale on central moments.

vi) Arithmetic mean of the following frequency distribution is 5, find the value of x.

Variable :	2	4	6	8
Frequency :	$x-1$	$x+1$	$x+1$	$2x-5$

C - 121

Total No. of Pages : 4

Seat No.	

B.C.S. (Part - I) (Semester - I) Examination, 2013

STATISTICS (Paper - I)

Descriptive Statistics - I

Sub. Code : 55977

Day and Date : Saturday, 13 - 04 - 2013 **Total Marks : 50**

Time : 3.00 p.m. to 5.00 p.m.

Instructions : 1) **All questions are compulsory.**

2) **Figures to the right in the bracket indicate full marks.**

3) **Use of Calculator and statistical tables is allowed.**

Q1) Choose the correct alternative. **[10]**

a) Which limits are excluded in case of exclusive type of class intervals ?

i) lower limits ii) upper limits

ii) either i) or ii) iv) both i) & ii)

b) Discrete variable is _____

i) a variable taking all possible values in a certain range.

ii) a variable taking all values between 0 and ∞.

iii) a variable taking only particular values.

iv) all the above.

c) When the population under study is of heterogeneous type then we use _____

i) Systematic sampling ii) SRS

iii) Stratified random sampling iv) None of these

P.T.O.

d) Median for arranged data is _____

i) mean of first and last value ii) most frequent value

iii) least frequent value iv) middle most value

e) Which one of the following cannot be found for open ended class intervals

i) mean ii) median

iii) mode iv) any one of the above

f) Second quartile divides the series in the ratio _____

i) 1 : 4 ii) 1 :2

iii) 1 : 1 iv) 2 : 1

g) A measure of location that can be located from cummulative frequency curve is _____

i) mode ii) median

iii) mean iv) none of these

h) The value of standard deviation of a set of values will be _____

i) zero if all observations are equal

ii) always positive

iii) positive although the values are negative

iv) all the above

i) If the smallest value in a set is 7 and its range is 85. The largest value of the set is _____

i) 85.7 ii) 12.14

iii) 78 iv) 92

j) The statement that 'the variance is equal to the second central moment' is _____

i) always true ii) sometimes true

iii) never true iv) ambiguous

Q2) Attempt any two of the following. **[20]**

a) What do you mean by measures of central tendency ? What are its type ? State requirements of good measures of central tendency.

b) Define range, variance and show that they are independent of change of origin.

c) The first four moments of a distribution about the value 5 are 2,20,40 and 200 resp.

i) Find the first four central moments.

ii) Find the mean and S.D.

Q3) Attempt any four of the following **[20]**

a) Mean of 100 items is 90. If at the time of calculations three items were wrongly taken as 30,72,88 instead of 60,80 & 50. Find the correct mean.

b) Explain with illustrations

i) Variable ii) Attribute

c) Given that : $\beta_2 = 2.6$, $\beta_1 = 0.19$, $\mu_2 = 1.2$ Find μ_3 *and* μ_4.

d) Write a short note on Histogram.

e) Explain the difference between absolute and relative measures of dispersion.

f) Following data shows the performance of two bats men A & B.

	Bats man A	Bats man B
No. of innings	50	40
Mean runs	55	50
s.d. of runs	8	10

Which bats man is more consistent in score ?

Seat No.	

B.C.S. (Part - I) (Semester - I) Examination, November - 2014

STATISTICS (Paper - I)

Descriptive Statistics - I (New)

Sub. Code : 59700

Day and Date :Monday, 03 - 11 - 2014 **Total Marks : 50**

Time : 12.00 noon. to 2.00 p.m.

Instructions : 1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Use of calculators and statistical table is allowed.**

Q1) Choose the correct alternative: **[10]**

i) A frequency distribution can be _____.

a) Discrete b) Continuous

c) Both (a) & (b) d) None of (a) & (b)

ii) Mode values are determined graphically with the help of _____.

a) Ogive curves b) Histogram

c) Frequency curves d) Frequency polygon

iii) Median divides the data in _____ equal parts.

a) 2 b) 4

c) 10 d) 100

iv) Which one of the following is not a measure of central tendency?

a) Mode b) Mean

c) Median d) Mean deviation

v) The first order moment about mean is always _____.

a) Zero b) One

c) Mean d) Variance

vi) The first quartile is also known as _____.

a) Median b) Lower quartile

c) Mode d) Third quartile

vii) One of all measures of dispersion, the easiest one to calculate is _____.

a) Standard deviation b) Variance

c) Range d) Quartile deviation

viii) *If* $\gamma_2 > 0$, then the frequency curve is _____.

a) Mesokurtic b) Leptokurtic

c) Platykurtic d) None of these

ix) In _____ sampling scheme each unit of population do have equal chance of selection.

a) SRSWR b) SRSWOR

c) Stratified d) Systematic

x) Variance is _____ central moment.

a) First b) Second

c) Third d) Fourth

Q2) Attempt any two of the following: **[20]**

i) What is a measure of central tendency? State different measures of central tendency. Discuss the merits and demerits median.

ii) What is dispersion? State the requirements of good measures of dispersion. Explain range and Quartile deviation & its coefficients.

iii) Explain the term Skewness. Write the types and measures of Skewness.

Q3) Attempt any four of the following: **[20]**

i) What is sampling? Write the types of Sampling.

ii) Explain the method to construct Histogram.

iii) Calculate Mean for X & Y and also obtain its combined mean for given data:

X: 53,98,95,81,75,61,59,55

Y: 47,25,32,37,30,40,39,45

iv) Distinguish between Absolute and Relative measure of dispersion.

v) The first three moments of a distribution about the value 1 are 2, 25 and 80 respectively. Find its mean, variance and third central moment.

vi) Explain the term Kurtosis.

Seat No.	

N - 1608

Total No. of Pages : 3

B.C.S (Part-I) (Semester-I) Examination, April -2015

STATISTICS (Paper - I)

Descriptive Statistics

Sub. Code : 59700

Day and Date : Wednesday, 29 - 04 - 2015 **Total Marks : 50**

Time : 12.00 noon to 2.00 p.m.

Instructions : 1) **All questions are compulsory.**

2) **Figures to the right indicate full marks.**

3) **Use of calculator and statistical table is allowed.**

Q1) Choose correct alternative. **[10]**

i) Median divides the data in _____ equal parts.

a) 2 b) 4

c) 10 d) 100

ii) The first ordered raw moment is always _____.

a) Median b) Mean

c) Mode d) s.d.

iii) For open ended classes we can draw _____.

a) Histogram b) Frequency curve

c) Ogive curves d) None of these

iv) Mean deviation is minimum when it is taken about_____.

a) Mean b) Third quartile

c) Mode d) Median

v) For a frequency distribution mean =100, mode =90, Karl Pearson's coefficient is 0.5 then s.d.is _____.

a) 1 b) 10

c) 20 d) 400

vi) Given that $\mu 4 = 24, \mu 2 = 3$, the distribution is _____.

a) Leptokurtic b) Symmetric

c) Platykurtic d) Mesokurtic

vii) If each value of set of observations is multiplied by 15 then coefficient of variation will be increased by _____.

a) Zero percent
b) Five percent
c) Ten percent
d) Fifteen percent

viii) If C.V. (x)=C.V. (y) then _____.

a) $\sigma_x = \sigma_y$
b) Mean (x) = mean(y)
c) $\sigma_x = \sigma_y$ and mean (x)=mean(y)
d) none of these

ix) In _____ sampling method each unit of population have equal chance of selection.

a) SRSWR
b) SRSWOR
c) Stratified
d) Systematic

x) If $\sum(x-5)=20$ for a group of 10 values then mean is _____.

a) 15
b) 7
c) 30
d) 25

Q2) Attempt any Two of the following. **[20]**

i) What is a measure of dispersion ? State different measures of dispersion Discuss merits and demerits of standard deviation.

ii) Define the term skewness. Explain the types of skewness.

iii) What is an ogive curve? Explain it's construction. What are it's uses?

Q3) Attempt any four of the following. **[20]**

i) State empirical relation between mean, median and mode. If mean and median of distribution are 144 and 156 respectively then find mode.

ii) The first three moments about the value 3for a distribution are1,16,-40 respectively.Find mean, variance and third central moment.

iii) If $n=100, \sum x=-20, \sum x^2=220,$ find s.d.and c.v.

iv) Explain in brief different methods of sampling.

v) Compute mean deviation (M.D.) about median for following data 31,35,29,63,55,72,37

vi) Write a note on Sheppard's correction.

Seat No.	

B–1534

Total No. of Pages : 3

B.C.S. (Part - I) (Semester - I) Examination, December - 2015

STATISTICS (Paper - I)

Descriptive Statistics

Sub. Code : 59700

Day and Date : Tuesday, 01 - 12 - 2015 **Total Marks : 50**

Time : 03.00 p.m. to 05.00 p.m.

Instructions : 1) **All questions are compulsory.**

2) **Figures to right indicate full marks.**

3) **Use of calculator and statistical table is allowed.**

Q1) Choose the correct alternative. [10]

a) Mode can be graphically determined by using _____.

i) Ogive curves ii) Histogram

iii) Frequency curve iv) Frequency polygon

b) The relation mean > median > mode is valid for _____.

i) Symmetric ii) Positively skewed

iii) Negatively skewed iv) None of these

c) _____ is relative measure of dispersion.

i) C.V. ii) M.D.

iii) Q.D. iv) S.D.

d) _____ can not be found for open ended class.

i) Mean ii) Mode

iii) Median iv) Quartiles

P.T.O

e) When population under study is of heterogeneous type then we use _____.

i) Systematic sampling ii) SRS

iii) Stratified random sampling iv) None of these

f) Second ordered central moment is _____.

i) Mean ii) Variance

iii) S.D. iv) Median

g) If constant value 30 is substracted from each observation in given the mean of new data is _____.

i) Increased by 30 ii) Decreased by 30

iii) 30 times the original iv) Remains same

h) Given that mean = 1, variance = 3 and $\mu_3 = 0$ then the given distribution is _____.

i) Symmetric ii) Positively skewed

iii) Negatively skewed iv) Leptokurtic

i) If mean = 10 and c.v. = 40% then variance is _____.

i) 4 ii) 8

iii) 16 iv) 12

j) The median of 6 observations is 21.If highest observation is increased by 3 then median is _____.

i) 21 ii) 24

iii) 21.5 iv) None of these

Q2) Attempt any TWO of following. **[20]**

a) Define raw and central moments. Express the formulae of first Four central moments in terms of raw moments.

b) Discuss dispersion? Which are the types of measures of dispersion? State merits and demerits of S.D.

c) Define mean, median and mode. State relation between them. What are requirements of good average?

Q3) Attempt any FOUR of following. **[20]**

a) Write a note on kurtosis.

b) Discuss effect of change of origin and scale on mean.

c) Given that mean = 160, mode = 157 and s.d. = 50.

Findi) Karl Pearson's coefficient of skewness.

ii) Coefficient of variation.

d) Find Q.D. of following data.

61, 62, 63, 62, 63, 62, 64, 64, 60, 65, 58

e) Explain procedure for construction of histogram.

f) Explain advantages of sampling method over census method.

❄❄❄

ST-177

Total No. of Pages : 3

Seat No.	

B.C.S (Part-I) (Semester-I) Examination, November - 2016
STATISTICS
Descriptive Statistics - I (Paper - I)
Sub. Code : 59700

Day and Date : Friday, 25 - 11 - 2016 **Total Marks : 50**

Time : 3.00 p.m. to 5.00 p.m.

Instructions : **1)** **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Use of calculator and statistical table is allowed.**

Q1) Choose the correct alternative. **[10]**

a) If coefficient of variation and s.d. of a series are 60% and 20 respectively. The value of arithmetic mean is_____

i) 100/6 ii) 100/3

iii) 3/100 iv) 6/100

b) For negatively skewed distribution the correct relation between Mean, median and mode is_____.

i) Mean<Median<Mode ii) Mode<Median<Mean

iii) Median<Mean<Mode iv) Median>Mean>Mode

c) The first ordered moment about origin is equal to_____.

i) Variance ii) Zero

iii) Mean iv) None of these

d) _____is measure of central tendency can be determined graphically.

i) Mean ii) Geometric mean

iii) Harmonic mean iv) Mode

e) A sample consist of_____.

i) All units of population ii) 50% of units of population

iii) Subset of population iv) 5% of units of population

P.T.O.

f) If a moderately skewed distribution has mean 30 and mode 36 then the median is_____.

i) 30 ii) 28

iii) 32 iv) None of these

g) The value of coefficient of kurtosis β_2 can be_____.

i) Less than 3 ii) Greater than 3

iii) Equal to 3 iv) All of these

h) The coefficient of range of the set of values 15, 12, 27, 6,9, 18, 21is_____

i) 1.571 ii) 4.500

iii) 0.636 iv) 0.222

i) Second quarile is equal to_____.

i) Mode ii) Median

iii) Mean iv) None of these

j) _____is the example of qualitative data.

i) Height ii) Weight

iii) Age iv) Grade in examination

Q2) Attempt any two of the following. **[20]**

a) Define: i)r^{th} raw moment ii)r^{th} central moment

Express the first four central moments in terms raw moments.

b) Define standard deviation (s.d.) and combined s.d.

The following data is related to runs scored by two batsman

	Batsman A	Batsman B
Number of innings	50	100
Average runs	61	70
s.d.	8	9

i) What is combined mean and combined s.d. of runs of two bats man?

ii) Which batsman is more consistent in run getting?

c) Define median, mode and quartiles. State merits and demerits of median.

Q3) Attempt any Four of the following. **[20]**

a) Write a note on stratified random sampling.

b) Discuss the effect of change of origin and scale on mean.

c) Distinguish between absolute and relative measures of dispersion.

d) Write a note on Sheppard's correction.

e) For a group of 10 observations, $\Sigma x=452$, $\Sigma x^2=24270$ and mode=43.7 Find Karl Pearson's coefficient of skewness.

f) Explain the terms:

i)Classification

ii)class limits

iii) Class width

iv) Variable

v)Attribute

✓ ✓ ✓

C - 466

Total No. of Pages : 3

Seat No.	

B.C.S. (Part - I) (Semester - I) Examination, November - 2017
STATISTICS
Descriptive Statistics -I (Paper - I)
Sub. Code: 59700

Day and Date :Thursday, 16 - 11 - 2017 **Total Marks : 50**

Time : 3.00 p.m. to 5.00 p.m.

Instructions : 1) **All questions are compulsory.**

2) **Figures to right indicate full marks.**

3) **Use of calculator and statistical table is allowed.**

Q1) Choose the correct alternative. **[10]**

a) Using less than Ogive curve, we can locate_____.

i) Mode ii) Median

iii) Quartiles iv) Both (ii) and (iii)

b) For open ended classes one can compute_____.

i) Median ii) Quartiles

iii) Mode iv) All of these

c) If $\gamma_1=0$; then distribution is _____.

i) Positively skewed ii) Negatively skewed

iii) Symmetric iv) None of these

d) Second ordered central moment is _____.

i) Variance ii) Mean

iii) Zero iv) Mode

P.T.O.

e) If mean, mode and Karl Pearson's coefficient of skewness are 120, 123 and -0.3 respectively; then c.v.of the distribution is _____.

i) 9 ii) 8.3333

iii) 10 iv) None of these

f) _____measures of dispersion are unit less.

i) Absolute ii) Relative

iii) Both (i) and (ii) iv) None of these

g) Quartiles divides the data into_____equal parts.

i) Two ii) Ten

iii) Four iv) Hundred

h) Subset of population is_____.

i) Sample ii) SRSWR

iii) SRSWOR iv) All of the above

i) If mean, median and mode of a distribution are 10,12 and 15 then the distribution is _____.

i) Symmetric ii) Negatively skewed

iii) Positively skewed iv) Mesokurtic

j) Sum of deviation of observation taken from mean is always_____.

i) Positive ii) Negative

iii) One iv) Zero

Q2) Attempt any two of following : **[20]**

a) Define raw and central moments. Express first four central moments in terms of raw moments.

b) What is dispersion ? Define range and s.d. State merits and demerits of s.d.

c) Define i) Classification ii) Class limits iii) Open ended classes iv) Class width v) Mid value

Q3) Attempt any four of the following : **[20]**

a) Calculate mean of first n natural numbers.

b) Discuss effect of change of origin and scale on central moments.

c) Compute mean, median and mode for data given below :

12, 21, 40, 46, 54, 62, 40, 78, 90

d) Write a note on kurtosis.

e) Explain stratified random sampling method.

f) Distinguish between absolute and relative measures of dispersion.

& & &

C - 466

Total No. of Pages : 3

Seat No.	

B.C.S. (Part - I) (Semester - I) Examination, November - 2017
STATISTICS
Descriptive Statistics -I (Paper - I)
Sub. Code: 59700

Day and Date :Thursday, 16 - 11 - 2017 **Total Marks : 50**
Time : 3.00 p.m. to 5.00 p.m.

Instructions : 1) **All questions are compulsory.**
2) **Figures to right indicate full marks.**
3) **Use of calculator and statistical table is allowed.**

Q1) Choose the correct alternative. **[10]**

a) Using less than Ogive curve, we can locate_____.

i) Mode ii) Median

iii) Quartiles iv) Both (ii) and (iii)

b) For open ended classes one can compute_____.

i) Median ii) Quartiles

iii) Mode iv) All of these

c) If $\gamma_1=0$; then distribution is _____.

i) Positively skewed ii) Negatively skewed

iii) Symmetric iv) None of these

d) Second ordered central moment is _____.

i) Variance ii) Mean

iii) Zero iv) Mode

P.T.O.

e) If mean, mode and Karl Pearson's coefficient of skewness are 120, 123 and -0.3 respectively; then c.v.of the distribution is _____.

i) 9 ii) 8.3333

iii) 10 iv) None of these

f) _____measures of dispersion are unit less.

i) Absolute ii) Relative

iii) Both (i) and (ii) iv) None of these

g) Quartiles divides the data into_____equal parts.

i) Two ii) Ten

iii) Four iv) Hundred

h) Subset of population is_____.

i) Sample ii) SRSWR

iii) SRSWOR iv) All of the above

i) If mean, median and mode of a distribution are 10,12 and 15 then the distribution is _____.

i) Symmetric ii) Negatively skewed

iii) Positively skewed iv) Mesokurtic

j) Sum of deviation of observation taken from mean is always_____.

i) Positive ii) Negative

iii) One iv) Zero

Q2) Attempt any two of following : **[20]**

a) Define raw and central moments. Express first four central moments in terms of raw moments.

b) What is dispersion ? Define range and s.d. State merits and demerits of s.d.

c) Define i) Classification ii) Class limits iii) Open ended classes iv) Class width v) Mid value

Q3) Attempt any four of the following : **[20]**

a) Calculate mean of first n natural numbers.

b) Discuss effect of change of origin and scale on central moments.

c) Compute mean, median and mode for data given below :

12, 21, 40, 46, 54, 62, 40, 78, 90

d) Write a note on kurtosis.

e) Explain stratified random sampling method.

f) Distinguish between absolute and relative measures of dispersion.

& & &