

STATISTICS 2019

Time: 15 minutes

(Regular & Private)

Marks: 10

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer from the given options:

(i) The limit of probability is:

- a) -1 to +1
- b) 0 to 1
- c) 1 to 2
- d) -2 to -1

(ii) If two dice are rolled once, then the probability of getting the same numbers is:

- a) $1/5$
- b) $1/2$
- c) $1/6$
- d) 0

(iii) The data obtained from the Federal Bureau of Statistics is called:

- a) Secondary data
- b) Primary data
- c) Continuous data
- d) Complex data

(iv) The median of the data 4, 6, 3, 2, 0, 1, 7 is:

- a) 4
- b) 3
- c) 0
- d) 2

(v) If the Mean of the data of 25 values is 20, then Σx is equal to:

- a) 1.25
- b) 10
- c) 50
- d) 500

(vi) If $P(A) = 1/3$, $P(B/A) = 3/10$, then $P(A \cap B) =$:

- a) $9/10$
- b) $2/10$
- c) $6/10$
- d) $1/10$

(vii) The number of different arrangements of four persons to sit around a table is: a) 4

- b) 6
- c) 16

- d) 24
- (viii) If $L(x - A) = 0$, then:
- $A < \bar{x}$
 - $A > \bar{x}$
 - $A = 0$
 - $A = \bar{x}$
- (ix) If $\bar{z} = 10$ and $y = 3z + 2$, then \bar{y} is:
- 30
 - 32
 - 2
 - 10
- (x) Two events that cannot happen together are called:
- Joint events
 - Composite events
 - Independent events
 - Mutually exclusive events

STATISTICS 2019

(Regular & Private)

Time: 1:45 Minutes

Marks: 40

SECTION "B" (SHORT QUESTION ANSWER)

NOTE: Attempt any FIVE part questions from this section. All question carry equal marks.

2.

- (i) Differentiate between the following:
- Discrete and Continuous variable
 - Primary and Secondary Data
- (ii) Draw a Multiple Bar Diagram of the following data:

Country	Birth Rate	Death Rate
Pakistan	50	20
India	45	15
England	15	10
Egypt	40	15
Japan	10	14

- (iii) In how many ways can the letters of the following words be arranged?
- TOMORROW
 - YESTERDAY
- (iv) The following table shows the prices of an item for 8 years. Calculate the Index Number for all years, taking an average of 1990 and 1991 as base year.

Year	1990	1991	1992	1993	1994	1995	1996	1997
Price	45	50	60	65	70	72	68	83

- (v) The probability that Jawwad will pass the test is $\frac{2}{3}$ and that for Daniyal is $\frac{3}{4}$. Find the probability that:
- Both will pass the test
 - Both will not pass the test
- (vi) How many three digit numbers can be formed from the digits 1,4, 5,7,8,9 if the digits are:
- Repeated
 - not repeated
- (vii) The mean of ten numbers is 8.If the eleventh number is included in the data, the mean becomes 9. What is the value of the eleventh number?
- (viii) The following data refers to the prices of rice in a city:

125	126	135	132	130
128	123	122	131	120
130	135	121	128	126
132	134	135	137	132
138	129	130	124	126

Prepare a frequency table with the class interval of 4 rupees each such that the lower class limit of first class is 119.

SECTION "C" (DETAILED-ANSWER QUESTON)

Note: Attempt Two questions from this Section.

3. Calculate the Price Index Number for the following data by applying:

- i) Laspeyre's Index Number ii) Paasche's Index Number iii) Fisher's Index Number

Commodity	Price		Quantity	
	2008	2009	2008	2009
A	7	11	40	50
B	3	3	80	100
C	5	7	50	50

4. Find the mean, the Median, and the mode for the following frequency distribution.

Class Interval	2 - 4	5 - 7	8 - 10	11 -13	14 – 16
Frequency	2	8	12	4	2

5. A bag contains 3 white balls, 4 black balls and 5 red balls. If 3 balls are drawn at random, find the probability that:
- all the three balls are red
 - two balls are red and one ball is black
 - all three balls are in different in color

STATISTICS 2018

Time: 15 minutes

(Regular & Private)

Marks: 10

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer from the given options:

- (i) On tossing a die, the probability of getting 6 is:
- 0
 - $\frac{1}{6}$
 - $\frac{1}{2}$
 - 1
- (ii) The number of wicket taken by a bowler in a match is:
- Inferential Variable
 - Discrete Variable
 - Continuous Variable
 - Qualitative Variable
- (iii) If $\Sigma(x - 15) = 0$ for a data then, the arithmetic mean will be:
- 15
 - Zero
 - 1
 - 15
- (iv) $P(A) + P(A')$ is equal to:
- Zero
 - 1
 - $P(A \cap B)$
 - $P(A \cup B)$
- (v) The variance of 7, 7, 7, 7 is:
- Zero
 - 7
 - 7.2
 - 7.5
- (vi) The data obtained from the newspaper is:
- Secondary data
 - Primary data
 - Continuous data
 - Discrete data
- (vii) Median can be located graphically by using:

- a) Bar diagram
 - b) Pie diagram
 - c) Histogram
 - d) Ogive
- (viii) The sum of all relative frequencies is:
- a) -1
 - b) 0.5
 - c) 1
 - d) 100
- (ix) The set of all possible outcomes of an experiment is called:
- a) Sample event
 - b) Sample point
 - c) Sample space
 - d) Null set

STATISTICS 2018

Time: 1:45 Minutes

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Marks: 40

SECTION "B" (SHORT QUESTION ANSWER)

NOTE: Attempt any FIVE part questions from this section. All question carry equal marks.

2.

(i) Different between Primary and Secondary Data, and given at least two sources of each kind. (ii)

Complete the following table:

C.I	Frequency	Relative Frequency	Cumulative Frequency
1 - 5	?	?	?
6 - 10	21	?	27
11 -15	?	0.38	65
16 - 20	19	0.19	84
21 -25	16	?	?

(iii) Draw histogram and frequency polygon for the following frequency distribution:

Class interval	2 -3	4 -5	6 -7	8 -9	10 -11
Frequency	1	3	5	4	2

(iv) For the data 101, 102, 103, 104, 105, and $y = x - 100$, find \bar{x} and \bar{y} .

(v) The mean height of 45 students of a class is 60" & the mean height of 55 students of other class is 57". Find the combined mean.

(vi) In how many ways can the word UNIVERSITY be arranged?

(vii) Let A and B are two events in sample space such that $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$ and $P(A \cup B) = \frac{1}{6}$ Find $P(A \cap B)$

SECTION "C" (DETAILED-ANSWER QUESTON)

Note: Attempt Two questions from this Section.

3. The following table is about marks awarded to 30 students.

23	32	36	41	10	25	41	43	15	34
17	5	01	16	8	15	46	45	39	33
12	32	18	31	24	28	33	27	34	04

(a) Construct frequency distribution table, making classes 1- 5, 6 -10, 11 -15, and so on (b) Make cumulative frequency & relative frequency for the above data.

4. Calculated the median, the mode and locate both graphically for the following data:

Age (year)	08 -12	12 -16	16 -20	20 - 24	24 – 28	Total
No. of policy holder	10	18	32	17	07	84

5. Calculate Laspeyre's, Paasche's and Fisher index number by taking 1990 as base year:

Commodities	1990		1995	
	Price	Quantity	Price	Quantity
A	22	28	24	26
B	25	30	26	25
C	24	34	25	30
D	20	39	22	33

STATISTICS 2017

Time: 15 minutes

(Regular & Private)

Marks: 10

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer fro from the given options:

(i) The median of the data 3, 1, -2, 4, 2, 6 is:

- a) 2
- b) 2.5
- c) 3
- d) -2

(ii) If $P(A) = 0.60$, $P(B) = 0.80$ and $P(A \cap B) = 0.84$, then $P(A \cup B)$ Is: a) -0.20

- b) 1.40
- c) 0.56
- d) 0.48

(iii) The data obtained from trade journals and magazines is called:

- a) Primary data
- b) Continuous data
- c) Discrete data
- d) Secondary data

(iv) The age of college students is an example of:

- a) Quantitative variable
- b) Qualitative variable.
- c) Parametric variable
- d) Exogenous variable

(v) An Ogive is drawn to find the:

- a) Median
- b) Mode
- c) Index Number
- d) Mean

(vi) If $x = 50$ and $y = 3x - 10$, the mean of y is:

- a) 140
- b) 100
- c) -10
- d) -20

(vii) The sum of the angles of a pie diagram is equal to:

- a) 180°
- b) 90°
- c) 360°
- d) 100°

(viii) A coin is tossed. The probability of getting tail is:

- a) 0.75
- b) 0.50
- c) -0.50
- d) 1

(ix) The positive square root of the product of Laspeyre's and Paache's index number is:

- a) Price Index Number
- b) Quantity Index Number
- c) Fisher's Index Number
- d) Marshall Index Number

- (x) Two events that cannot happen together are called:
- e) Joint events
 - f) Composite events
 - g) Independent events
 - h) Mutually exclusive events

STATISTICS 2017

Time: 1:45 Minutes

(Regular & Private)

Marks: 40

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) Different between the following:
- a) Quantitative Variables and Qualitative Variable.
 - b) Primary data and Secondary data.

- (ii) The following data represent the price of the commodity in rupees.

125	126	135	132	130
128	123	122	131	130
120	135	121	128	126
132	134	135	137	132
138	129	130	124	126

Prepare a frequency distribution taking an interval of size 5. Also find Class boundaries and mid points.

- (iii) The mean of 10 numbers is 8. If an eleventh number is included in the data, the mean becomes 9. What is the eleventh number?
- (iv) How many permutations can be made from the letters of the following words?
- a) MILLENIUM
 - b) ACCOUNTANCY
- (v) How many two digit numbers can be formed from the digits 4, 5, 6, 7, 8, if the digits are= a) Repeated?
b) Not repeated?
- (vi) Following table shows the road accidents in the district East for December 2008. Draw a Pie Chart in your answer script

Type of vehicle	Motor cycles	Buses	Car	Truck	Others
No. of Accidents	38	10	14	18	22

(vii) The given table show the price of commodities for . Construct the link relatives:

Years	2000	2001	2002	2003	2004	2006
Price (Rs.)	45	52	58	64	72	88

(viii) Three coins are tossed together:

Find: (a) The sample space

(b) The probability of getting at most 1 tail.

(c) The probability of getting at least 2 tails.

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this Section.

3. The measurement of the heights of the Students of a college are given in the following frequency distribution.

Height	135 -144	145 - 154	155 -164	165 - 174	174 - 184	185 - 194
No. of students	5	14	25	32	16	8

Find the Mean, Median, Mode.

4. Calculate;

- Laspeyre's Price index number
- Paasche's Price index number
- Fisher's Ideal index number

For the given data taking 2010 as base year.

STATISTICS 2016

Time: 15 minutes

(Regular & Private)

Marks: 10

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- A cumulative frequency distribution is graphically represented by: a) Histogram
b) Histogram
c) Ogive
d) Frequency curve
- Color of eyes is the type of this variable:
a) Discrete

- b) Quantitative
- c) Qualitative
- d) Continuous

iii Published data is known as:

- a) Primary data
- b) Secondary data
- c) Discrete data
- d) Continuous data

iv Statistics deals with the behavior of:

- a) Individual
- b) Aggregate
- c) Particular group
- d) Current affairs

v Graph of time series is called:

- a) Ogive
- b) Histogram
- c) Histogram
- d) Frequency polygon

vi Nth positive root of the product of 'n' observations is:

- a) H.M.
- b) A .M.
- c) Median
- d) G.M.

vii Second quartile is also called:

- a) Mode
- b) A .M.
- c) G.M.
- d) Median

viii Positive square root of variance is:

- a) Mean
- b) Coefficient of variation
- c) Standard deviation
- d) Quartile deviation

- ix The annual rainfall recorded in a city is an example of:
- Index number
 - G.M.
 - Time series
 - Variance

- X If and sum of values is 84, then n will be: $12x$
- 5
 - 7
 - 9
 - 10

STATISTICS 2016

Time: 1:45 Minutes

(Regular & Private)

Marks: 40

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) Describe the sources of the collection of primary data.
 (ii) Draw a pie diagram in your answer script of the following

Categories	A	B	C	D	E	F
Frequency	9	12	57	24	10	8

- (iii) From the given data, calculate price index numbers, taking 1967 as base year using simple Aggregative method.

Item	Price		
	1967	1970	1973
A	12.00	15.00	15.60
B	3.00	3.60	3.60
C	5.00	6.00	9.70

- (iv) The ages of employees in department are classified as:

Age in year	16 -20	21 - 25	26 -30	31 - 35	36 – 40
No. of employees	14	25	30	25	4

Draw a histogram and find the mode graphically.

- (v) The data given below shows the daily wages paid to the workers in a factory. Classify this data taking a class interval of 18 and starting with 100. Also calculate relative frequencies.

240	165	175	185	210	117	100
140	175	165	103	145	179	104
176	179	214	126	147	169	175
210	217	225	217	222	217	179
165	145	175	107	172	124	134
146	157	165	179	145	175	156

- (vi) For a set of 15 observations, the mean came out to be 12. Later on checking it is discovered that an observation 20 was incorrectly recorded whereas the correct value was 02. Calculate the correct mean.
- (vii) A card is drawn from a deck of 52 playing cards. What is the probability that it is: a) Diamond?
b) Face card
- (viii) How many permutations can be formed from the word 'COMMITTEE'?

SECTION "C" (DETAILED-ANSWER QUESTON)

Note: Attempt Two questions from this Section.

3. Calculate the mean, median and mode of the following data:

Group	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	12	18	27	20	17	06

- 4.
- a) A fair coin is tossed three times what is the probability of getting at least one head?
- b) What is the probability of getting a total of 7 or 11 when a pair of dice is tossed?
- c) The probability that a student will pass in Accounting is $\frac{6}{9}$ and the probability that he will pass in Statistics is $\frac{8}{13}$, what is the probability that he will pass in both the subjects?

- 5.
- a) A bag contains 3 red, 4 white and 3 green balls. If a sample of 3 balls is selected at random, find the probability that:
- i) All are of different colors.
- ii) Two are of white color.
- b) The probability that A will be alive for 30 years is 0.4 and probability that B will be alive for 30 years is 0.8.

What is the probability that both will be alive for 30 years?

STATISTICS 2015

Time: 15 minutes

(Regular & Private)

Marks: 10

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) On tossing a die, the probability of getting 6 is:
- a) 0
 - b) $1/6$
 - c) $1/2$
 - d) 1
- (ii) The number of wicket taken by a bowler in a match is:
- a) Inferential Variable
 - b) Discrete Variable
 - c) Continuous Variable
 - d) Qualitative Variable
- (iii) If $\Sigma(x - 15) = 0$ for a data then, the arithmetic mean will be:
- a) -15
 - b) Zero
 - c) 1
 - d) 15
- (iv) $P(A) + P(A')$ is equal to:
- a) Zero
 - b) 1
 - c) $P(A \cap B)$
 - d) $P(A \cup B)$
- (v) The variance of 7, 7, 7, 7 is:
- a) Zero
 - b) 7
 - c) 7.2
 - d) 7.5
- (vi) The data obtained from the newspaper is:
- a) Secondary data
 - b) Primary data
 - c) Continuous data
 - d) Discrete data
- (vii) Median can be located graphically by using:
- a) Bar diagram
 - b) Pie diagram

- c) Histogram
 - d) Ogive
- (viii) The sum of all relative frequencies is:
- a) -1
 - b) 0.5
 - c) 1
 - d) 100
- (ix) The set of all possible outcomes of an experiment is called:
- a) Sample event
 - b) Sample point
 - c) Sample space
 - d) Null set

STATISTICS 2015

Time: 1:45 Minutes

(Regular & Private)

Marks: 40

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) Describe the sources of the collection of Primary Data.
- (ii) The data given below shows the marks obtained by the students in Statistics.

37	48	73	79	84	28	15	17	39	46
75	80	28	17	29	23	64	67	65	69
27	29	65	28	38	23	29	63	67	48
47	49	67	42	45	47	49	37	48	38
34	49	68	84	67	49	79	83	44	75

- a) Construct frequency distribution taking equal interval of size 10 marks.
- b) Find the relative frequencies.

- (iii) For the data given below, calculate the mean of X and Y where $y = 2x + 10$.

x	-8	-4	-3	0	4	6	10
f	3	7	10	30	4	16	10

- (iv) For the following data:

	YEAR
--	------

Commodity	2011	2012	2013
A	18	20	20
B	25	25	27
C	60	59	62
D	40	80	75

Compute aggregative price Index numbers using simple aggregative method taking 2011 as base year.

(v) A coin and a die are thrown together:

Find: (a) Sample space

(b) The probability of getting a head.

(vi) Draw a Pie diagram for the following data on your answer script:

Item	Food	Cloth	Rent	Medical	Mis.	Total
Expenditure	3000	1000	2000	500	700	7200

(vii) For the data 23, 18, 28, 15, 23, 19, show that $L(x - x) = 0$

(viii) A bag contains 6 green and 4 white balls. Three balls are drawn at random from the bag. What is the probability of getting 2 green and 1 white ball?

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Three coins are tossed. Prepare the sample space and find the probability of getting 2 or 3 heads.

(b) Two dice are rolled. Find the probability that the sum of the dots on the faces of the dice is 9.

4. Calculate the mean, the median and the mode from the For the following data, calculate weighted Index number for the year 2011 using:

C.I.	10-19	20-29	30-39	40-49	50-59	60-69	70-79
f	2	3	11	20	32	25	7

5. For the following data, calculate weighted Index number for the year 2011 using:

(i) Laspeyre's Price Index numbers.

(ii) Paasche's Price Index numbers.

(iii) Fisher's Price Index numbers.

Commodity	2010		2011	
	Price	Qty.	Price	Qty.
Wheat	30	5	45	4

Sugar	120	4	150	3
Oil	42	10	60	8
Milk	225	12	130	7

STATISTICS 2014

Time: 15 minutes
10

(Regular)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) The height of students of a class is:
- a) Discrete variable
 - b) Continuous variable
 - c) Qualitative variable
 - d) Constant
- (ii) The data which is processed at least once is called:
- a) Primary Data
 - b) Qualitative Data
 - c) Quantitative Data
 - d) Secondary Data
- (iii) If the mean of the data with, 25 observations is 40, then $3X$ is: a) 10
- b) 100
 - c) 1000
 - d) None of these
- (iv) If the mean is 5 and the mode is 5 of a symmetrical frequency distribution, then the median is: a) 0
- b) 5
 - c) 10
 - d) 25
- (v) The sum of the deviations of observations from the mean is always:
- a) Maximum
 - b) Minimum
 - c) Zero
 - d) Negative
- (vi) A card is drawn at random from 52 playing cards. The probability of getting a face card is: a) $1/13$
- b) $2/13$

- c) $\frac{3}{13}$
 d) $\frac{4}{13}$
- (vii) 4 coins are tossed together. The number of all possible outcomes is: a) 2
 b) 4
 c) 8
 d) 16
- (viii) 5C_3 is equal to:
 a) 20
 b) 10
 c) 100
 d) 15
- (ix) The alphabets of the word PEN can be arranged in:
 a) 3 ways
 b) 4 ways
 c) 5 ways
 d) 6 ways
- (x) The characteristic of sample is known as:
 a) Population
 b) Statistic
 c) Parameter
 d) Variable

STATISTICS 2014

Time: 1:45 Minutes
40

(Regular)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

2.

(i) Define discrete and continuous variables. Write two examples for each. (ii) The following data refers to the monthly wages (in Rs) of 25 workers.

340	379	331	323	318	341	340	332	350
363	311	315	327	334	340	355	340	356
338	331	345	333	348	329	349		

Prepare frequency distribution by taking class intervals are 310-319, 320-329.

- (iii) The mean of 4 number is 5 and the mean of 3 other numbers is 12. What is the mean of these 7 numbers?
 (iv) How many committees can be formed out of 13 women and 4 men by taking 3 women and 2 men? (v) Draw a Pie Chart on your answer script from the following data.

Items	Food	Clothing	Rent	Medical	Others
Expenditure in (Rs.)	95	32	50	23	40

(vi) For the data 16, 12, 14, 18, 20 show that $E(x - \bar{x}) = 0$.

(vii) Taking 1980 as the Base year, compute price relatives of the following prices of wheat.

Years	1976	1977	1978	1979	1980	1981	1982
Price	21	22	23	24	25	26	27

(vii) How many permutations are possible for the alphabets of the word ACCOUNTANCY and ECONOMICS?

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Compute the mean, median and mode of the given frequency distribution.

Weight	16 – 20	21 – 25	26 – 30	31 – 35	36 – 40	41 – 45
Frequency	4	6	8	14	8	6

4. Calculate:

a) Laspeyres's

b) Passache's

c) Fisher's Price index number by taking 2011 as base year using the following data.

Commodity	2011		2012	
	Price	Quantity	Price	Quantity
A	6.60	240	7.10	330
B	4.15	185	4.90	210
C	1.25	315	2.00	345

5. Two balanced dice are rolled together: Find the:

(a) Sample space

(b) Probability that the sum of dots on the top face of both dices is eleven.

(c) Probability of getting the same number of dots on both the dices.

(OR) A bag contains 4 white and 6 black balls, 3 balls are drawn at random. Find the probability of getting:

(a) 2 white balls and 1 black ball

(b) 3 white balls

(c) 3 black balls

STATISTICS 2014

Time: 15 minutes
10

(Private)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) A cumulative frequency distribution is graphically represented by: a) Histogram
b) Historigram
c) Ogive
d) Frequency curve
- (ii) Color of eyes is the type of this variable:
a) Discrete
b) Quantitative
c) Qualitative
d) Continuous
- (iii) Published data is known as:
a) Primary data
b) Secondary data
c) Discrete data
d) Continuous data
- (iv) Statistics deals with the behavior of:
a) Individual
b) Aggregate
c) Particular group
d) Current affairs
- (v) Graph of time series is called:
a) Ogive
b) Historigram
c) Histogram
d) Frequency polygon
- (vi) Nth positive root of the product of 'n' observations is:
a) H.M.
b) A .M.
c) Median
d) G.M.

- (vii) Second quartile is also called:
- Mode
 - A .M.
 - G.M.
 - Median
- (viii) Positive square root of variance is:
- Mean
 - Coefficient of variation
 - Standard deviation
 - Quartile deviation
- (ix) The annual rainfall recorded in a city is an example of:
- Index number
 - G.M.
 - Time series
 - Variance
- (x) If and sum of values is 84, then n will be: $12x$
- 5
 - 7
 - 9
 - 10

STATISTICS 2014

Time: 1:45 Minutes
40

(Private)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) The mean of 25 values is 56. If a value 82 is included in the data, then find the mean of 26 values.
- (ii) From a pack of 52 cards, a card is drawn at random. What is the probability that the card is:
- Either a 10 or a 5
 - Either a face card or a number card?
- (iii) Two persons claimed that their target to hit is 65 percent of 72 probability respectively. They are given a target to hit. Find the probability of the target being hit by any of them.
- (iv) The price of a commodity for six years is given in the table. Calculate price relatives.

Year	2008	2009	2010	2011	2012	2013
Price (Rs.)	10	15	20	25	30	35

- (v) For the given table, construct Relative frequency and Cumulative frequency distribution.

Class Interval	Frequency
101 – 110	4

111 – 120	5
121 – 130	12
131 – 140	20
141 – 150	16
151 – 160	10

(vi) Differentiate between the following:

(a) Descriptive and inferential Statistics

(b) Primary and Secondary Data (vii) A coin is tossed three times. Find:

(a) Sample Space

(b) Probability that at least two heads will appear (viii) Two dice are rolled.

Find:

(a) Sample Space

(b) Probability that the sum of the dots on the faces of the die is 8

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. The following data represents the retail price of 40 items in rupees:

50	50	50	28	65	40	50	22	32	30
79	50	22	20	35	24	25	38	35	35
65	20	14	25	24	48	15	10	17	60
25	22	60	30	12	30	10	12	20	68

(a) Prepare a frequency taking equal classes of size 14.

(b) How many items have price more than Rs. 51?

4. Compute mean, median and mode for the following frequency distribution.

Class interval	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29
Frequency	12	20	48	10	7	3

5. Calculate Laspeyre's Passche's and Fisher's price index number for 2008.

Commodity	2006		2008	
	Price	Quantity	Price	Quantity
A	64	270	102	320
B	40	124	70	210
C	80	130	95	125

(OR) From a bag containing 5 white and 4 black balls, 3 balls are drawn at random. Find the probability of getting:

(a) 2 white balls and 1 black ball.

(b) 3 white balls

(c) 3 black balls

STATISTICS 2013

Time: 15 minutes
10

(Regular)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) The characteristic of population is known as:
- (a) Sample
 - (b) Statistics
 - (c) Parameter
 - (d) Variable
- (ii) Median of 4, 5, 3, 6, 9 is:
- (a) 3
 - (b) 4
 - (c) 5
 - (d) 9
- (iii) An index number based on more than one commodity is called:
- (a) Simple index
 - (b) Composite index
 - (c) Price relative
 - (d) Link relative
- (iv) A set of all possible outcomes of an experiment is called:
- (a) Sample space
 - (b) Events
 - (c) Outcomes
 - (d) None of these
- (v) In rolling a die, the probability of getting an odd number is: (a) $\frac{1}{3}$
(b) $\frac{1}{2}$
(c) $\frac{2}{3}$ (d) 1
- (vi) The sum of deviations of observations from Arithmetic mean is always:
- (a) Maximum
 - (b) Minimum
 - (c) Zero
 - (d) Negative
- (vii) The height of students of a class is:
- (a) Discrete variable
 - (b) Continuous variable
 - (c) Qualitative variable
 - (d) Constant
- (viii) The number of combination of 5 distinct things taken 2 at a time is: (a) 30
(b) 5
(c) 10
(d) 20
- (ix) The permutation of 4 distinct objects in a line is:

- (a) 64
 (b) 6
 (c) 12
 (d) 24
- (x) The mode of a frequency distribution is located graphically by:
 (a) Frequency curve
 (b) Cumulative frequency curve
 (c) Histogram
 (d) Pie diagram

STATISTICS 2013

Time: 1:45 Minutes
40

(Regular)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

2.
 (i) The number of tourists arriving in Pakistan from different countries in the year 200 is given below, Represent this information in Multiple Bar Diagram.

Country	USA	UAE	England	Germany	Canada
Male	250	100	150	150	100
Female	175	10	80	100	75

- (ii) The mean of a set of 12 number is 4. The mean of another set of 20 number is 5. Find the combined mean of the set of 32 numbers
- (iii) In how many possible Ways can the letters. Of the words STATISTICS and Pakistan be arranged?
- (iv) A coin and a die are thrown together. draw a sample space and find the probability of obtaining a head.
- (v) Explain Qualitative and Quantitative data with examples.
- (vi) The A.M. of 20 observations is 50. Find the A.M. if:
 (a) An observation 54 is excluded from the data.
 (b) An observation 30 is included in the data
- (vii) Find the mean, median and mode of 2, 10, 5, 11, 12, 10, 11, 14 and 14.
- (viii) Construct chain base index number for the given data:

Year	2005	2006	2007	2008	2009	2010
	18	25	32	38	50	55

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Given below are the hours that 25 men work for in a week.

36.5	33.0	29.8	38.4	24.4
------	------	------	------	------

43.2	31.5	36.3	58.1	15.6
40.1	37.0	28.5	41.9	24.5
37.6	29.7	30.8	21.8	45.4
30.5	52.7	34.8	40.1	37.3

- (i) Construct a frequency distribution, taking 8 as the size of the class interval with the first class interval as 13.0-20.9.
- (ii) Find class boundaries and class mark.

4. Calculate the:

- (a) Mean
 (b) Median
 (c) Mode for the data given below:

Class	50—59	60—69	70—79	80—89	90—99	100—109
Frequency	7	13	25	24	13	8

5. Calculate

- (a) Laspeyre's
 (b) Pascha's
 (c) Fishers price index number for the given data taking 2010 as base year:

Commodity	2010		2011	
	Price	Quantity	Price	Quantity
A	10	15	12	16
B	15	20	20	22
C	25	10	30	15

STATISTICS 2013

Time: 15 minutes
10

(Private)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) Three persons can be seated in a row in:
- (a) 3 ways
 (b) 1 way
 (c) 9 ways
 (d) 6 ways
- (ii) The median of the data 2, -2, 3, -3, 1, -1, is:
- (a) 1
 (b) -3

- (c) 3
(d) 0
- (iii) The limit of probability is:
(a) -1 to +1
(b) 0 to 1
(c) 1 to 2
(d) -2 to -1
- (iv) If two dice are rolled once, then the probability of getting the same numbers is:
(a) $1/5$
(b) $1/2$
(c) $1/6$ (d) 0
- (v) The data obtained from the Federal Bureau of Statistics is called:
(a) Secondary data
(b) Primary data
(c) Continuous data
(d) Complex data
- (vi) The median of the data 4, 6, 3, 2, 0, 1, 7 is:
(a) 4
(b) 3
(c) 0 (d) 2
- (vii) if the Mean of the data of 25 values is 20, then Σx is equal to:
(a) 1.25
(b) 10
(c) 50
(d) 500
- (viii) If $P(A) = 1/3$, $P(B/A) = 3/10$, then $P(A \cap B) =$:
(a) $9/10$
(b) $2/10$
(c) $6/10$
(d) $1/10$
- (ix) The number of different arrangements of four persons to sit around a table is:
(a) 4
(b) 6
(c) 16
(d) 24
- (x) If $L(x - A) = 0$, then:
(a) $A < \bar{x}$
(b) $A > \bar{x}$
(c) $A = 0$
(d) $A = \bar{x}$

STATISTICS 2013

Time: 1:45 Minutes
40

(Private)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) Differentiate between Primary data and Secondary data. Give at least two sources of each kind.
- (ii) Differentiate between Discrete variable and Continuous variable.
- (iii) For the data 02, 04, 06, 08, 10 verify that $\Sigma(x-\bar{x})=0$
- (iv) Construct Histogram and Frequency polygon on same the graph paper for the following data:

Class Int.	3 - 7	8 - 12	13 - 17	18 - 22	23 - 27
Frequency	10.	15	20	10	5

- (v) Calculate simple price index numbers with (a) 2001 as "base year (b) average prices of 2001 and 2007 as base year price for the following data:

Year	2001	2002	2003	2004	2005	2006	2007
Price	10	15	20	25	30	35	40

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- (vi) From a group of 8 boys and 4 girls, a group of 3 students is to be selected. How many combination are possible if we select:
- (i) 2 boys and 1 girl?
- (ii) Boys only
- (vii) For a certain distribution the mean is 40.4 & the median is 36. Find the mode using the empirical formula.
- (viii) A fair coin is tossed 3 times. What is the probability that at least one head will appear?

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Complete the following table.

CJ.	C.B.	F	Relative frequency	Cumulative frequency
0 - 3	___ - 2.5	___	___	___

_____ - 7	_____ - 7.5	14	_____	29
8 - _____	7.5 - _____	_____	0.40	69
12 - 15	11.5 - 15.5	22	0.22	94
16 - 19	15.5 - 19.5	09	_____	_____
	Total	100		

4. Calculate (i) Laspeyre's Index number (ii) Paasche's Index number (iii) Fisher's Index number for the following data:

Articles	2003		2004	
	Price	Quantity	Price	Quantity
A	170	56	175	63
B	200	53	175	76
C	190	64	200	93
D	180	13	195	27

5. From a pack of 52 well shuffled cards, a card is drawn at random. What is the, probability that it is a:

- Red card
- Spade
- Queen

STATISTICS 2012

Time: 15 minutes
10

(Regular)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- The height of students of a class is:
 - Discrete variable
 - Continuous variable
 - Qualitative variable
 - Constant
- The data which is processed at least once is called:
 - Primary Data
 - Qualitative Data

- (c) Quantitative Data
- (d) Secondary Data

- (iii) If the mean of the data with, 25 observations is 40, then $3X$ is: (a) 10
(b) 100
(c) 1000
(d) None of these

- (iv) If the mean is 5 and the mode is 5 of a symmetrical frequency distribution, then the median is:
(a) 0
(b) 5
(c) 10
(d) 25

- (v) The sum of the deviations of observations from the mean is always:
(a) Maximum
(b) Minimum
(c) Zero
(d) Negative

- (vi) A card is drawn at random from 52 playing cards. The probability of getting a face card is:
(a) $1/13$
(b) $2/13$
(c) $3/13$
(d) $4/13$

- (vii) 4 coins are tossed together. The number of all possible outcomes is:
(a) 2
(b) 4
(c) 8
(d) 16

- (viii) 5C_3 is equal to:
(a) 20
(b) 10
(c) 100
(d) 15

- (ix) The alphabets of the word PEN can be arranged in:
(a) 3 ways
(b) 4 ways
(c) 5 ways
(d) 6 ways

- (x) The characteristic of sample is known as:
(a) Population
(b) Statistic

- (c) Parameter
- (d) Variable

STATISTICS 2012

Time: 1:45 Minutes
40

(Regular)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

- 2.
- (i) Construct sample space when two dice are rolled.
 - (ii) Describe the general procedure of construction of a frequency distribution.
 - (iii) Draw a Pie-Chart for the grades obtained by the students in your answer-script.

Grades	A -1	A	B	C	D	E	F
Students	20	40	60	85	120	20	50

- (iv) A card is drawn at random from a pack of 52 playing cards. Find the probability of getting a red face card.
- (v) In how many ways can we arrange the letters of the word PAKISTAN and the word ACCOUNTACY?
- (vi) Construct a frequency distribution taking size of class intervals as 10 and the starting point of first class interval is 126 for the given data. Also find relative frequencies and mid values of intervals.

137	152	127	147	141	157	132	153
146	142	162	169	149	135	166	157
163	133	148	150	136	127	162	152
145	154	144	126	139	126	158	147
134	148	153	161	136	147	142	159
146	138	144	166	141	143	136	147

- (vii) The given table shows the prices of a commodity for 6 years. Construct the Link Relatives.

Years	2000	2001	2002	2003	2004	2005	2006
Frequency	45	52	58	64	72	80	88

- (viii) Differentiate between Population and Sample.

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Three coins are tossed simultaneously.

- (a) Construct sample space using Tree Diagram.
- (b) (i) Find the probability of getting No Head.
- (ii) Find the probability of getting at least One Head.

4. For the given data: Calculate the following weighted index numbers for the year 2009.

- (i) Laspeyer's price index number
- (ii) Paasche's price index number

(iii) Fisher's Ideal price index number

Commodities	2 008		2 009	
	Price	Quantity	Price	Quantity
Sugar	32	5	45	4
Oil	12	4	150	3
Milk	42	10	48	8
Mutton	220	12	350	7

5. For the given frequency distribution:

(a) Calculate the:

- (i) Mean
- (ii) Median
- (iii) Mode

(b) Show mode with the help of graph.

Age	5 – 14	15 – 24	25 – 34	35 – 44	45 – 54
Frequency	5	10	20	18	6

STATISTICS 2012

Time: 15 minutes

(Private)

Marks:

10

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) The mean of 4, 4, 4, 4, 4 is:
 - (a) 0
 - (b) 3
 - (c) 4
 - (d) 5
- (ii) The number of students in a class is:
 - (a) Continuous variable
 - (b) Discrete variable
 - (c) Qualitative variable
 - (d) None of these
- (iii) If the range of a data is 10 and the maximum value is 40, then the minimum value is:
 - (a) 4
 - (b) 20

- (c) 30
(d) 50
- (iv) A card is drawn at random from 52 cards. The probability of getting an Ace is:
(a) $\frac{1}{3}$
(b) $\frac{2}{13}$
(c) $\frac{3}{13}$
(d) $\frac{4}{13}$
- (v) For a pie diagram, the sum of all sector angles is:
(a) 1800
(b) 2000
(c) 270
(d) 3602
- (vi) A data which is collected for the first time is called:
(a) Primary data
(b) Secondary data
(c) Continuous data
(d) None of these
- (vii) The letters of the word CAT can be arranged in:
(a) 3 ways
(b) 4 ways
(c) 5 ways
(d) 6 ways
- (viii) Median can be located graphically by using:
(a) Bar diagram
(b) Histogram
(c) Pie diagram
(d) Ogive
- (ix) The base year index is always:
(a) 98%
(b) 99%
(c) 100%
(d) 101%
- (x) The word Statistics is nowadays used in.
(a) Three senses
(b) Two senses
(c) Five senses
(d) Four senses

STATISTICS 2012

Time: 1:45 Minutes

(Private)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) Differentiate between Primary data and Secondary data.
(ii) Mean of the data of 25 values is 45.6.
Find: (a) the mean, if a value 30 is inclined in the data.
(b) the mean, if value 12 is excluded from the data
(iii) Find the number of permutations of the letters of the word "SLATISTICS".
(iv) Find the Mean, Median and Mode of 1, 5, 4, 7, 9, 10, 11, 11, 13, 14, 10 and 2. (v) Draw a pie diagram for the following data:

Items	A	B	C	D	E
Frequency	16	20	12	24	18

- (vi) A card is drawn randomly from a pack of 52 cards. What is the probability that the card is (a) Black?
(b) King?
(vii) Three balanced coins are tossed together, find: The Sample Space
The probability that there is no tail
(viii) Construct simple price index numbers for the following data by taking 2007 as base year:

Year	2007	2008	2009	2010	2011
Price (Rs.)	216	249	264	276	288

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Find (i) Mean (ii) Median (iii) Mode for the following data and also comment about the distribution.

C.I	40 — 49	50 — 59	60 — 69	70 — 79	80 — 89	90 — 99
F	8	13	24	24	13	8

4. Calculate Laspeyre's Index number, Paasche's index number and Fisher's index number for the following data:

Commodities	2008		2009	
	Price	Quantity	Price	Quantity
A	6.60	7.10	240	330
B	4.15	4.90	185	210
C	1.25	2.00	315	345
D	0.65	1.30	260	115

5. Two balance dice are rolled together. Find:
(i) the sample space
(ii) The probability that sum of dots is an even no:
(iii) The probability that sum of dots is at least 9

- (iv) The probability that sum of dots is at most 4

STATISTICS 2011

**Time: 15 minutes
10**

(Regular)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

(i) A cumulative frequency distribution is graphically represented by:

- (a) Histogram
- (b) Histogram
- (c) Ogive
- (d) Frequency curve

(ii) Color of eyes is the type of this variable:

- (a) Discrete
- (b) Quantitative
- (c) Qualitative
- (d) Continuous

(iii) Published data is known as:

- (a) Primary data
- (b) Secondary data
- (c) Discrete data
- (d) Continuous data

(iv) Statistics deals with the behavior of:

- (a) Individual
- (b) Aggregate
- (c) Particular group
- (d) Current affairs

(v) Graph of time series is called:

- (a) Ogive
- (b) Histogram
- (c) Histogram
- (d) Frequency polygon

(vi) Nth positive root of the product of 'n' observations is:

- (a) H.M.
- (b) A .M. (c) Median (d) G.M.

- (vii) Second quartile is also called:
 (a) Mode
 (b) A .M. (c) G.M.
 (d) Median
- (viii) Positive square root of variance is:
 (a) Mean
 (b) Coefficient of variation
 (c) Standard deviation
 (d) Quartile deviation
- (ix) The annual rainfall recorded in a city is an example of: (a) Index number (b) G.M.
 (c) Time series
 (d) Variance
- (x) If and sum of values is 84, then n will be: 12x
 (a) 5
 (b) 7
 (c) 9
 (d) 10

STATISTICS 2011

(Regular)

Time: 1:45 Minutes

Marks:

40

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) What is frequency distribution? What are its advantages? Explain the method of construction of Frequency distribution.
- (ii) For the observations 2, 4, 6, 0, 3, show that $\Sigma (x - \bar{x}) = 0$.
- (iii) Find the price relatives of the following prices using 1970 as the base year:

Years	1970	1971	1972	1973	1974	1975	1976	1977
Prices	7.65	8.99	9.71	11.05	12.22	10.91	8.18	10.37

- (iv) A card is drawn at random from a pack of playing cards. Find the probability that the card is not a face card.
- (v) In how many ways can the letters of the following words be arranged?
 (a) ACCOUNTANCY (b) MILLENNIUM
- (vi) Draw a pie diagram for the following data in your answer script:

Category	A	B	C	D	E	F
Frequency	9	12	57	24	10	8

(vii) The following data shows the sales (thousands of rupees) of a shop for 50 days:

66	95	84	101	114	101	83	73	72	106
90	72	106	86	93	80	91	77	77	87
107	88	75	105	118	89	112	96	91	90
95	107	92	75	109	92	86	63	78	102
102	113	99	111	69	84	91	101	82	76

Construct a frequency distribution from the given data taking 60 — 69, 70 — 79 etc. as class intervals. Also find mid values of the class intervals.

(viii) The mean of a data of 25 values is 58. At the time of checking, it was found that a value 35 has been wrongly entered as 53. Find correct value of the mean of the data.

SECTION “C” (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Construct Price Index Numbers for the year 2001, from the following data, using the:

- (i) Laspeyre's index number
- (ii) Paasche's index number

Commodities	Price (Rs.)		Quantity	
	2001	2002	2001	2002
A	64	75	750	280
B	44	45	120	130
C	58	68	85	67

Also find fisher's price index number with the help of Laspeyre's index number and Paasche's index number.

4. Find mean, median and mode of the following frequency distribution:

C.I	5 – 9.9	10 – 14.9	15 – 19.9	20 – 24.9	25 – 29.9	30 – 34.9
Frequency	6	22	35	17	12	8

5. From a bag containing 5 black, 3 red and 2 green balls 4 balls are drawn at random. Find the probability of getting:

- a) 2 black balls, 1 red ball and 1 green ball
- b) 2 black balls and 2 red balls
- (c) 4 black balls

STATISTICS 2011

Time: 15 minutes
10

(Regular)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

- (i) On tossing a die, the probability of getting 6 is:
- 0
 - $1/6$
 - $1/2$
 - 1
- (ii) The number of wicket taken by a bowler in a match is:
- Inferential Variable
 - Discrete Variable
 - Continuous Variable
 - Qualitative Variable
- (iii) If $\Sigma(x - 15) = 0$ for a data then, the arithmetic mean will be: a) -15
- Zero
 - 1
 - 15
- (iv) $P(A) + P(A')$ is equal to:
- Zero
 - 1
 - $P(A \cap B)$
 - $P(A \cup B)$
- (v) The variance of 7, 7, 7, 7 is:
- Zero
 - 7
 - 7.2
 - 7.5
- (vi) The data obtained from the newspaper is:
- Secondary data
 - Primary data
 - Continuous data
 - Discrete data
- (vii) Median can be located graphically by using:
- Bar diagram

- b) Pie diagram
 - c) Histogram
 - d) Ogive
- (viii) The sum of all relative frequencies is:
- a) -1
 - b) 0.5
 - c) 1
 - d) 100
- (ix) The set of all possible outcomes of an experiment is called:
- a) Sample event
 - b) Sample point
 - c) Sample space
 - d) Null set

STATISTICS 2011

(Private)

Time: 1:45 Minutes
40

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

- 2.
- (i) Differentiate between Population and Sample.
 - (ii) Differentiate between Discrete variable and Continuous variables.
 - (iii) The mean of 51 values is calculated as 55. If a value 45 is excluded from the data, find the mean.
 - (iv) Following table shows the road accidents in district central for December 2010:

Types of Vehicles	Motor cycle	Buses	Cars	Trucks	Others
No. of Accidents	38	10	14	18	22

Draw a Pie chart in your answer sheet.

- (v) From a batch consisting of 5 boys and 6 girls a group of 5 students is to be selected. How many combinations can be formed of:
 - (a) 3 boys and 2 girls (b) boys and 3 girls
- (vi) Find a sample space for tossing of three coins with the help of tree diagram.
- (vii) Find the number of permutations that can be formed from the letters of the word "Assistant". (viii) Following table shows the prices of sugar for 6 years.

Years	1990	1991	1992	1993	1994	1995
Price (Rs.)	9.00	9.50	11.50	12.00	13.25	14.50

Construct the Link Relatives

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

3. Following data shows the number of cars sold in 40 days.

7	8	13	10	9	10	5	12	8	6
10	11	15	12	10	11	10	5	9	13
8	12	3	8	10	15	7	6	8	8
5	6	9	7	14	8	13	5	5	14

(a) Prepare frequency distribution with only 4 classes of size 3 each.

(b) Calculate mean and median of the frequency distribution prepared in 3 (a).

4. Calculate Laspeyre's Price Index number, Paasche's Price index number and Fisher's Price index number data by taking 2008 as base year:

Commodities	2008	2009	2008	2009
	Price		Quantity	
A	6.60	7.10	240	330
B	4.15	4.90	185	210
C	1.25	2.00	315	345
D	0.65	1.30	260	115

5. A bag contains 10 red and 5 green balls. 3 balls are drawn at random from the bag. Find the probability (a) 2 red and one green ball (b) One red ball (c) All green balls

STATISTICS 2010

Time: 15 minutes
10

(Regular/Private)

Marks:

SECTION "A" MULTIPLE CHOICE QUESTIONS

1. Choose the correct answer for each from the given options:

(i) On tossing a die, the probability of getting 6 is:

- e) 0
- f) $1/6$
- g) $1/2$
- h) 1

(ii) The number of wicket taken by a bowler in a match is:

- e) Inferential Variable

- f) Discrete Variable
 - g) Continuous Variable
 - h) Qualitative Variable
- (iii) If $\Sigma(x - 15) = 0$ for a data then, the arithmetic mean will be: e) -15
- f) Zero
 - g) 1
 - h) 15
- (iv) $P(A) + P(A')$ is equal to:
- e) Zero
 - f) 1
 - g) $P(A \cap B)$
 - h) $P(A \cup B)$
- (v) The variance of 7, 7, 7, 7 is:
- e) Zero
 - f) 7
 - g) 7.2
 - h) 7.5
- (vi) The data obtained from the newspaper is:
- e) Secondary data
 - f) Primary data
 - g) Continuous data
 - h) Discrete data
- (vii) Median can be located graphically by using:
- e) Bar diagram
 - f) Pie diagram
 - g) Histogram
 - h) Ogive
- (viii) The sum of all relative frequencies is:
- e) -1
 - f) 0.5
 - g) 1
 - h) 100
- (ix) The set of all possible outcomes of an experiment is called:
- e) Sample event
 - f) Sample point
 - g) Sample space
 - h) Null set

STATISTICS 2010

Time: 1:45 Minutes
40

(Regular/Private)

Marks:

SECTION "B" (SHORT QUESTION ANSWER)

2.

- (i) Differentiate between Qualitative variable and Quantitative variable and give three examples of each.
- (ii) Differentiate between primary Data and Secondary Data and give three examples of each.
- (iii) The following data represents the retail prices of a sample of different brands of a commodity:

50	50	50	28	65	40	50	22	32	30
79	50	22	20	35	24	25	38	35	35
65	20	14	25	24	48	15	10	17	60
25	22	60	30	12	30	10	12	20	68

Prepare a frequency distribution with equal classes of size 10.

- (iv) Draw a Frequency Polygon for the following frequency distribution:

Class Interval	6— 11	12— 17	18—23	24—29	30—35	36— 41
	6	23	34	17	12	8

- (v) Mean of the data of 24 values is 41.75.
Find: (a) The mean if a value 68 is included in the data
(b) The mean if a value 36 is excluded from the data
- (vi) The prices of a commodity for 8 years are given in the following table:

Years	2002	2003	2004	2005	2006	2007	2008	2009
Price	75	50	65	60	70	72	65	83

Find: (a) The Price Relatives by taking 2002 as the base year.

- (b) The Link Relatives.

- (vii) From a bag containing 8 Red and 5 White balls 3 balls are drawn at random.
Find: (a) The probability of getting 1 Red ball.
(b). The probability of getting 1 White ball.
- (viii) Three coins are tossed together.
Find: (a) The sample space.
(b) The probability of getting at most 1 Tail.
(c) The probability of getting at least 2 Tails.

SECTION "C" (DETAILED-ANSWER QUESTION)

Note: Attempt Two questions from this section.

- 3. The measurement of heights of the students of a college is given in the following frequency distribution:

Height	135 - 144	145 – 154	155 – 164	165 – 174	175 – 184	185 – 194
No of students	5	14	25	32	16	8

Find mean, median & mode of the frequency distribution.

4. The following table shows the price and quantity of three commodities A,B and C for the year 2000 and 2009.

Commodities	Price (Rs.)		Quantity	
	2000	2009	2000	2009
A	64	102	270	320
B	40	70	124	210
C	83	95	130	125

Find: Laspeyre's price index number, Paasche's price index number and Fisher's price index numbers by taking 2000 as the base year.

5. Two balanced dice are rolled together:

Find: (a) The sample space.

(b) The probability that the sum of dots is divisible by 6.

(c) The probability that, the sum of dots is 7.

(d) The probability that both dice show the same number of dots.