



- i. Graph sheets and statistical tables will be supplied on request.*  
*ii. Scientific calculators may be used.*  
*iii. All working steps should be clearly shown.*

**SECTION-A****I Answer any TEN of the following questions****10 x 1 = 10**

- 1 Define statistics in singular sense.
- 2 What is meant by a sample survey ?
- 3 Give an example for temporal classification.
- 4 What are captions of a table ?
- 5 Name the graph that are used to locate median.
- 6 Write one limitations of diagrams and graph.
- 7 Which average cannot be calculated for unequal class interval ?
- 8 Name the type of Kurtosis, if  $\beta_2 = 3$ .
- 9 What is the nature of correlation when  $r = -1$ ?
- 10 Write down 5<sup>th</sup> order difference equation for interpolation by binomial method.
- 11 Write the sample space S, when 3 coins are tossed once.
- 12 If  $E(X) = 5$ , then find  $E(10X - 9)$ .

**SECTION-B****II Answer any TEN of the following questions****10 x 2 = 20**

- 13 Write any two functions of statistics.
- 14 Mention the sources of secondary data.
- 15 Define frequency density and relative frequency.
- 16 Explain qualitative and quantitative classification with examples.
- 17 Write any two comparison of diagrams and graphs.
- 18 What are the advantages of diagrammatic representation of statistical data over tabulation?
- 19 For the values 1, 2, 4. Show that  $AM > GM > HM$ .
- 20 If Coefficient of variation and S.D of a distribution are 75% and 15 respectively, find its mean.
- 21 Write two properties of regression coefficients.
- 22 Compute Yule's Coefficient of associations from the following data:  $(AB) = 90$ ,  $(\alpha B) = 65$ ,  $(A\beta) = 260$ ,  $(\alpha\beta) = 110$ .
- 23 An Urn contains 4 white, 2 green, and 4 black balls, 3 balls are drawn at random. What is the probability that the drawn balls are 3 white.
- 24 If  $\text{Var}(X) = 9$ , and  $E(X) = 4$ , find  $E(X^2)$ .

**SECTION-C****III Answer any EIGHT of the following questions.****8 x 5 = 40**

- 25 Write any five limitations of statistics.
- 26 What are the methods of collecting primary data? Explain any two of them.
- 27 Prepare a blank table to show the population of a town according to i) Sex: men, women.  
ii) Age group in years: (0-25), (25-50), 50 & above, iii) Periods: 2008, 2009, 2010.
- 28 Construct a percentage bar diagram for the data relating to the expenditure by two families.

Items	Food	Clothing	Rent	Education	Fuel	Others
Family A (in ₹)	4500	2000	3500	1500	2000	3000
Family B (in ₹)	6000	4500	5000	3000	4000	2000

29 Calculate mean deviation from median for the following data.

<b>x</b>	5	15	25	35	45	55	65
<b>f</b>	8	12	10	8	3	2	7

30 From the following marks obtained by the students, in Accountancy and Statistics papers, Compute rank coefficient of correlation.

<b>Students</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
<b>Marks</b>	<b>Accountancy</b>	15	20	28	12	40	60	20	80
	<b>Statistics</b>	40	30	50	30	20	10	30	60

31 From the following data, estimate the production when the rainfall is 36 inches. The Coefficient of Correlation is 0.6.

	<b>Rainfall (in inches)</b>	<b>Production (in quintals)</b>
<b>Mean</b>	28	38
<b>SD</b>	16	11

32 200 Candidates appeared for II PUC examination in a college and 60 of them succeeded. 35 received a special coaching in tutorial class and out of them 20 candidates succeeded. Using Yule’s Coefficient association and discuss whether the special coaching is effective or not.

33 Interpolate the missing figure.

<b>Year</b>	2001	2002	2003	2004	2005	2006	2007
<b>Sales (in thousand)</b>	100	120	150	180	210	-	320

34 State and prove multiple theorem of probability for two independent events.

35 A bag contain 5 white balls and some black balls. If the probability of drawing a black ball is double that of white ball. Find the number of black balls in the bag.

36 A man throws a fair dice. If the throw results in an even number, he gets ₹5 otherwise he loses ₹10. Find his expectation.

**SECTION-D**

**IV Answer any TWO of the following questions.**

**2 x 10 = 20**

37 Two cricketers scored the following runs in 8 innings.

<b>A</b>	46	24	18	32	45	16	98	100
<b>B</b>	35	54	16	48	50	90	88	95

- i) Find who is better scorer?
- ii) Find who is more consistent?

38 Calculate coefficient of skewness based on quartiles for the following data :

<b>Sizes</b>	4-8	8-12	12-16	16-20	20-24	24-28	28-32	32-36	36-40
<b>Frequency</b>	6	10	18	30	15	12	10	6	2

39 Calculate Correlation Coefficient from the bivariate data given below:

<b>Y \ X</b>	<b>10-19</b>	<b>20-29</b>	<b>30-39</b>	<b>40-49</b>
<b>15-20</b>	7	4	2	1
<b>20-25</b>	3	4	-	1
<b>25-30</b>	2	1	1	-
<b>30-35</b>	-	-	1	-

- 40 a) A card is drawn from the pack of 52 playing cards. What is the probability that it is a king card known that the drawn card is spade?  
 b) Find the value of k in the following probability distribution and then find its mean and variance.

<b>X</b>	2	4	6	8	10
<b>P(x)</b>	$\frac{1}{12}$	k	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{6}$

**SECTION-E****(Practical Oriented Questions)**

**V Answer any TWO of the following questions. 2 x 5 = 10**

- 41 The following table gives ages of 32 individuals in a locality. Form a continuous frequency distributions using exclusive type of class intervals.

23, 46, 08, 13, 29, 36, 28, 01, 19, 28, 33, 11, 20,  
 28, 10, 59, 30, 43, 39, 30, 21, 40, 33, 36, 29, 21,  
 40, 16, 41, 19, 20, 31.

- 42 Using the following table draw an less than Ogive curve and determine the value of median from it.

<b>Wages in (₹)</b>	upto 80	upto 90	upto 100	upto 110	upto 120	upto 130	upto 140	upto 150
<b>No. of Workers</b>	12	30	65	107	157	202	222	230

- 43 A person travelled for 5 days covering equal distance each day. On the first day he drove at a speed of 70 km/hr, on the 2<sup>nd</sup> day at a speed of 60 km/hr, on the 3<sup>rd</sup> day at a speed of 55 km/hr, 4<sup>th</sup> day at 80 km/hr and last day 40 km/hr. What was his average speed?
- 44 If a random variable X assumes the value 0 and 1 with  $P(X = 0) = 3P(X = 1)$  then find  $E(X)$  and  $\text{Var}(X)$ .

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