



SRI BHAGAWAN MAHAVEER JAIN COLLEGE
Vishweshwarapuram, Bangalore 560004
Mock Examination Question Paper - January 2019

Course:	I PUC
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Subject:	Statistics
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Max. Marks:	100
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Duration:	3:15 hrs.
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- 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 State Croxton and Cowden's definition of Statistics.

- 2 What is meant by sample survey ?
- 3 Write a objective of class interval.
- 4 Write the formula of mid point of a class.
- 5 Name the graph that are used to locate median.
- 6 What is class frequency?
- 7 Mention any one essential of a good average.
- 8 Name the type of Kurtosis if $\beta_2 = 3$.
- 9 What is the nature of correlation when $r = -1$?
- 10 Write down 6th order difference equation for interpolation by binomial method.
- 11 Write the sample space S when 3 coins are tossed.
- 12 Define a random variable.

SECTION-B

II Answer any TEN of the following questions 10 x 2 = 20 13 What is continuous variable? Give an example.

- 14 Mention the methods of sampling.
- 15 What is frequency density and relative frequency?
- 16 Define stub and caption of a table.
- 17 What are the advantages of diagrammatic representation of statistical data over tabulation?
- 18 Mention two types of ogives.
- 19 The value of mean and median are 14 and 24 respectively. Find the mode.
- 20 If C.V and S.D of a distribution are 75% and 15 respectively. Find its mean.
- 21 Write two properties of regression co-efficients.
- 22 Write down: a) first order frequencies, b) second order frequencies.
- 23 If $P(A \cap B) = \frac{1}{3}$ and $P(B) = \frac{2}{3}$ find $P(A/B)$.
- 24 If $E(X) = 2$ and $E(X^2) = 20$, find S.D (X).

SECTION-C

III Answer any EIGHT of the following questions. 8 x 5 = 40 25 Write any five functions of Statistics.

- 26 Mention the methods of collection of primary data. Explain any two.
- 27 Prepare a blank table to show the population of a town according to:
 - (i) Age group in years:- (0-25), (25-50) (50 & above)
 - (ii) Sex:- Men, Women
 - (iii) Periods:- 2008, 2009, 2010.

28 Following is the data regarding monthly expenditure (in `) of two families A & B. Draw Percentage diagram.

Items	Expenditure (in `)	
	Family A	Family B
Food	2000	2500
Clothing	1000	2000
Rent	800	1000
Light and Fuel	400	500
Miscellaneous	800	200

29 Calculate Geometric Mean for the following data:

Temperature (in°C)	0-5	5-10	10-15	15-20	20-25	25-30
Number of days	5	10	20	7	5	3

30 Calculate rank correlation from the following data.

Height (in cm)	100	101	102	100	99	97	98	96	95	102
Weight (in kg)	98	99	99	97	95	92	95	94	90	91

31 If two regression equations are $y = x + 5$ and $16x = 9y - 94$ Find:

- Correlation coefficient between x & y .
- Mean values of x & y .

32 Given $N = 500$, $(\alpha\beta) = 280$, $(A) = 160$ and $(B) = 200$. Calculate Yule's coefficient of association.

33 Estimate the sales (in lakhs) in 2004 from the following data:

Year	2001	2002	2003	2004	2005	2006
Sales (in lakhs)	150	235	365	?	525	780

34 State and prove addition theorem of probability for two non-mutually exclusive events.

35 A box contains 4 red and 6 blue balls. Two balls are drawn from this box one after the other. What is the probability that they are red, if first drawn ball is (i) not replaced (ii) replaced

36 In a bivariate data, $E(x) = 4$, $E(y) = 4$, $E(xy) = 28$, $E(x^2) = 25$, $E(y^2) = 136$ Find.

- S.D (x)
- S.D (y)
- Coefficient of correlation (r).

SECTION-D

IV Answer any TWO of the following questions. $10 \times 2 = 20$ 37 Goals scored by two teams A and B in foot ball season are as follows:-

No of goals scored in a match (x)	Number of Matches	
	Team A	Team B
0	22	11
1	8	10
2	7	8
3	8	7
4	3	4

- (i) Which team is better?
(ii) Which team is more consistent?

38 Calculate Karl-Pearson's coefficient of skewness for the following distribution.

Marks	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89
No of students	5	9	14	20	25	15	8	4

39 From the following table showing percentage marks in Mathematics and Statistics of 10 students obtain regression equations.

Marks in Mathematics	75	80	93	65	87	71	98	68	89	77
Marks in Statistics	82	78	86	72	91	80	95	72	89	74

Also find the (i) expected marks in mathematics of a student who has scored 95% in Statistics.
(ii) expected marks in Statistics who has scored 92% in Mathematics.

- 40 a) Probability that "A" solves a problem is $\frac{2}{3}$ and that "B" solves it is $\frac{3}{5}$. Find the probability that
(i) both of them solve (ii) None of them solves.
b) A bag contains 4 green and 3 red balls. A man draws 3 balls at random from the bag. If he is to receive `20 for every green ball he draws and `10 for every red one. What is his expectation?

SECTION-E
(Practical Oriented Questions)

V Answer any TWO of the following questions.

5 x 2 = 10

41 From the following data of the hourly wages (in `) of workers employed in a certain factory, construct a frequency table.

76	63	83	75	61	41	109	82	60	40
78	95	56	77	78	65	67	50	84	76
100	81	59	73	54	79	79	80	104	69
72	80	70	69	64	42	76	84	90	77
73	71	94	78	86	51	96	103	52	79

42 Draw a histogram and locate mode from the following data:

Dress size (in inches)	0-6	6-12	12-18	18-30	30-36	36-42
Dress sold	4	8	15	20	12	2

43 Calculate coefficient of Q.D for the following distribution of hourly wages (in `) of firm employees.

Hourly wages (below `)	10	20	30	40	50	60	70	80
No. of Employees	2	15	60	82	95	122	140	150

44 A random variable X has the following probability distribution.

X	-2	-1	0	1	2	3
p(x)	0.1	0.1	0.2	2K	0.3	0.1

Find the value of „K“ and calculate mean and variance of x.