



Jain College, Jayanagar
I PUC MOCK PAPER - 2020
Subject: Statistics (31)

Duration: 3.15 minutes

Max.Marks:100

- Note:** 1. Graph sheets and statistical tables will be supplied on request.
2. Scientific calculators are allowed.
3. All working steps should be clearly shown.

Section– A

I. Answer any TEN of the following:

10 × 1 = 10

1. Define sample.
2. What is meant by statistical error?
3. Mention any one objective of classification.
4. What is tabulation?
5. Name the average which can be obtained graphically by median.
6. Write any one limitation of diagram.
7. Mention any one objective of average.
8. What are partition values?
9. Draw a scatter diagram to show that there exists perfect negative correlation between two variables.
10. What is interpolation?
11. What is the range of the probability?
12. Define probability distribution of random variable.

Section– B

II. Answer any TEN of the following:

10 × 2 = 20

13. Define quantitative characteristics with an example.
14. Mention two method of collecting primary data.
15. For the following data find frequency density.

CI	0-10	10-30
f	10	15

16. Define discrete and continuous frequency distribution.
17. Write any two importance of diagram and graphs
18. Name different graphs used for presentation of frequency distribution.
19. If the least and the highest value in a data are -8 and 60. Find range and coefficient of range.
20. The sum of lower and upper quartiles is 55 and their different is 15. If the median is 30 find the coefficient of skewness.
21. If $b_{xy} = -\frac{4}{3}$ and $b_{yx} = -\frac{2}{3}$. Find r_{xy} .
22. In case of two attributes, if $N = 250$. $(AB) = 30$, $A = 100$ and $(B) = 50$, then find the remaining classes and their frequencies.
23. Two cards are drawn from a pack of 52 playing cards. What is the probability that they are of queens?
24. If $E(X) = 4$, $E(Y) = 6$ and $E(XY) = 36$. Find $cov(X, Y)$.

Section – C

III. Answer any EIGHT of the following:

$8 \times 5 = 40$

25. Write any five functions of statistics.
26. Mention any five general rules while drafting a questionnaire.
27. Draw a blank table for the following data regarding
 Gender : Male, Female.
 Result : I class, II Class, Pass class, Failed
 Faculty : Arts, Commerce, Science.
 Class : I PUC, II PUC.

28. Following is the data regarding strength of a college. Draw percentage bar diagram.

Academic year	Number of students		
	Male	Female	Total
2009-10	350	150	500
2010-11	800	200	1000
2011-12	1200	800	2000
2012-13	1000	1000	2000

29. Find mean deviation from median to the following data

Expenditure (in Rs)	0-20	20-40	40-60	60-80	80-100
Frequency	14	22	27	21	15

30. Calculate rank correlation co-efficient for the following data and comment

X	20	32	25	20	28	24	30	29	26	22
Y	15	25	27	26	26	28	30	29	20	24

31. For the data given below, obtain the regression equation of X on Y and estimate the value of X when $Y = 100$.

X	91	97	108	121	67	124	51	73	111	57
Y	71	75	69	97	70	71	39	61	80	47

32. The following summary relates to the adult population of a small village.

Adult population : 600

No of employed : 240

Literate adult population employed : 80

Number of literates : 200

Determine whether literary and employed are associated or not.

33. Use the binomial expansion method to estimate the index number for 2010.

Year	2006	2007	2008	2009	2010
Index No	100	107	124	157	?

34. State and prove mortification theorem of probability for two dependent events.

35. A bag contains 6 white and 5 pink balls. Two balls are drawn from the bag. What is the probability that the ball drawn are of : i) same colour ii) different colours.

36. State and prove addition theorem of expectation for two discrete variables.

Section – D

IV. Answer any TWO of the following:

2 × 10 = 20

37. The number of runs scored by two batsmen A and B in different innings is as follows.

A	12	115	6	73	7	19	119	36	84	29
B	47	12	76	42	4	51	37	48	13	0

- i) Who is better run scorer?
 ii) Who is more consistent?

38. Calculate Karl –Pearsom’s coefficient of skewness from the following data.

Age (yrs)	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No of persons	10	40	20	14	10	40	16

39. Give the following information about expenditure on advertisement (crores) and sales (crores)

	Advertisement expenditure	Sales
Mean	20	120
S D	5	02

Correlation coefficient = 0.3

- a) Obtain the two regression equations.
 b) Estimate the sales when the expenditure on advertisement is Rs 25 crores.
 c) Estimate the budget on advertisement if the sales are Rs 150 crores.

40. From the following joint probability distribution of X and Y, find correlation coefficient r.

	Y	1	2	3
X	5	0	0.1	0.1
	0	0.1	0.1	0.2
	1	0.1	0.2	0.1

Section – E

V. Answer any TWO of the following:

2 × 5 = 10

41. Following data gives the number of lecturers belonging to commerce faculty in 40 different colleges. Prepare a suitable frequency distribution: 8, 6, 7, 5, 7, 6, 3, 9, 8, 6, 7, 5, 7, 6, 8, 5, 5, 9, 5, 6, 4, 7, 9, 6, 6, 4, 4, 7, 5, 5, 8, 5, 3, 3, 8, 4, 3, 4, 4, 3.

42. Draw an ogive from the following data and determine the value of median.

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No of students	15	29	60	42	24	35

43. Calculate geometric mean for the following distribution.

X	10	20	30	40	50
f	9	14	21	27	12

44. A random variable ‘X’ assumes the values 10 and 20 with respective probabilities 1/3 and 2/3. Find its mean and variance.
