



**Jain College, Jayanagar**  
**I PUC Mock Paper 2016**  
**Sub: Statistics (31)**

**Duration: 3 Hrs 15 mins**

**Max.Marks: 100**

- Note: 1. Statistical tables and graph sheets will be supplied.  
2. Scientific calculators are allowed.  
3. All working steps should be clearly shown.

PART – A

**I. Answer any ten questions:**

**1×10 =10**

1. Mention a function of statistics.
2. Define tabulation.
3. Which graph is used to find mode?
4. Find harmonic mean of  $1/4$  and  $1/6$ .
5. Write the formula for relative measure of mean deviation (M.D) from median.
6. What is Kurtosis?
7. Give an example for negative correlation.
8. Name the type of correlation seen in the following data.

Age (yrs)	15	16	17	18
Weight (kgs)	35	36	40	42

9. What is  $P(A \cup B)$ , if A and B are mutually exclusive events?
10. Write the sample space when a die is thrown once.
11. If  $P(A) = 2/3$ , then find  $P(A^c)$ .
12. Define probability distribution of random variable.

PART – B

**II. Answer any 10 questions:**

**2×10 =20**

13. What are methods of collection of primary data?
14. What are open – end class intervals? Give an example.
15. Name any two bar diagram.
16. Name different types of graphs.
17. What are various measures of central tendency?
18. Find combined mean, given  $\bar{x}_1 = 25, \bar{x}_2 = 40, n_1 = 20$  and  $n_2 = 10$ .
19. If  $CV = 10\%$  and  $SD = 4$ . Find mean.
20. If  $Q_1 = 30, Q_2 = 45$  and  $Q_3 = 60$ , then find the coefficient of skewness.
21. State any two properties of correlation coefficient.
22. If  $cov(x, y) = 63, v(x) = 94, \& v(y) = 66$ . Find  $r_{xy}$ .
23. A card is drawn from a pack of 52 playing cards. What is the probability that it is a i) Heart ii) Queen
24. If two cards are drawn one after another without replacement. Find the probability that they are king cards.

PART – C

**III. Answer any 8 questions:**

**5×8 = 40**

25. Define and explain Prof. Horace Secrist definition of statistics.
26. What is sampling? Mention the methods of sampling. Explain any one.

27. Draft a blank table to show the distribution of students of a college according to
- Gender – Boys and Girls
  - Faculty – Arts, Commerce and Science.
  - Year – 2007 – 2008, 2008 – 2009
28. Explain types of classification by giving example for each.
29. The following data represents no. of children per couple in 25 families. Construct a discrete frequency distribution
- 1, 0, 1, 2, 4, 2, 0, 1, 2, 4, 5, 2, 2, 3, 2, 3, 2, 4, 2, 1, 2, 2, 3, 1, 2.

30. Draw a frequency polygon for the following data.

Marks	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Students	7	12	20	36	28	13	9

31. Find  $D_5$  and  $P_{15}$

Wages (Rs)	100	150	200	250	300	350	400
Workers	4	10	15	28	18	10	3

32. Compute mean deviation from median for the following data.

Runs scored	5	10	15	20	25	30	35	40
Matches	16	32	36	44	28	18	12	14

33. Obtain SD and Variance.

CI	0-10	10-20	20-30	30-40	40-50
f	3	10	25	15	5

34. Compute rank correlation coefficient

Exam A	50	42	10	61	47	50	18	23	12
Exam B	49	41	40	88	50	61	38	42	25

35. A bag has 3 white and 2 black balls. Another bag has 1 white and 5 black balls. A ball is transferred from bag I to II and then a ball is drawn from bag II. What is the probability that it is white in colour?
36. A bag contains 5 red and 3 blue balls. 2 balls are randomly drawn from the bag. Find the expected number of red balls drawn.

#### PART – D

#### IV. Answer any 2 questions:

**10×2 =20**

37. Prepare a bivariate frequency distribution for the marks obtained in statistics and mathematics by 20 students.

Marks in Stats	23	20	25	22	25	22	23	25	23	22
Marks in Maths	10	12	15	14	14	10	12	15	12	11
Marks in stats	22	21	25	23	23	23	21	29	21	22
Marks in Maths	12	12	15	10	14	11	11	10	11	10

Also, write the marginal frequency distribution of marks in statistics.

38. Calculate Bowley's coefficient of skewness for the following distribution of wages of employess.

Wages (Rs)	200-400	400-600	600-800	800-1000	1000-1200	1200-1400
Employees	6	10	18	12	7	5

39. The following data represents the runs scored by two batsmen A and B in 10 innings.

Batsman A	100	31	0	37	91	50	9	5	75	10
Batsman B	80	10	40	75	20	9	63	18	60	25

Determine : i) who is better run scorer? ii) Who is more consistent scorer?

40. Following is the data regarding the ages of mother and number of children. Calculate Karl Pearson's coefficient of correlation and interpret.

Age (years)	No of children				
	0	1	2	3	4
20-25	2	3	2	-	-
25-30	1	3	6	2	-
30-35	-	1	8	3	-
35-40	-	-	3	2	2
40-45	-	-	2	-	-

PART – E

V. Answer any 2 questions:

2 × 5 = 10

41. Draw histogram and locate mode graphically for the data given below.

Wages (Rs)	200-250	250-300	300-350	350-400	400-450	450-500	500-550	550-600
Workers	6	9	10	12	18	10	4	1

42. Following are the survey results of a literate persons and the employment at a village. Find Yule's coefficient of association and interpret.

Total adults = 5000

Literates = 645

Employed = 695

Literate employed = 410.

43. Interpolate the index for 2008 from the following data.

Year	2006	2007	2008	2009	2010
Index	278	281	-	313	322

44. Find two regression lines from the data.

x	55	57	58	59	59	60	61	62	64
y	74	77	78	75	78	82	82	79	81

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