JAIN COLLEGE

463/465, 18th Main Road, SS Royal, 80 Feet Road, Rajarajeshwari Nagar,
Bangalore - 560 098

Date: ***SUBJECT: STATISTICS***

I PUC
Mock paper

Timings Allowed: 3 Hrs15Minutes. ***Total Marks: 100***

INSTRUCTIONS: 1. Graph sheets and statistical tables will be provided on request.
2. Scientific calculators may be used.
3. All working steps should be clearly shown.

Section- A

I. Answer any ten of the following questions: ***10X1=10***

1. Write the definition for statistics.
2. Define primary data in statistical enquiry.
3. What is the correction factor in the formation of frequency distribution?
4. What do you mean by open-end class of a frequency distribution?
5. Write a need for diagrammatic presentation of statistical data.
6. Which averages can be obtained by Ogive curves?
7. Write a formula for calculation of geometric mean for raw data.
8. Define mean deviation of measure of dispersion.
9. How regression coefficients are related with correlation coefficient?
10. Where does the two regression lines intersect?
11. What is the probability of sample space?
12. Find V (a).

Section- B

II. ***Answer any ten of the following questions:*** ***10X 2=20***

13. Define ordinal and nominal scale.
14. How the word statistics originated?
15. Mention two rules of formation of frequency distribution.
16. Write down a use and a limitation of diagrams and graphs.
17. Find geometric mean of 1, 4 and 16.
18. For a distribution S.D =8 and C.V = 18%, find the mean.
19. For a set of 8-paired observations, a square of the difference of ranks is 24. Find rank correlation coefficient.
20. Define classical approach of probability.
21. Mention two methods of measuring association of attributes.
22. Show that $0 \leq P(A) \leq 1$.
23. Define mathematical expectation of random variable.
24. From the following probability distribution, find the missing probability.

X	0	1	2	3
P (X)	0.2	0.1	?	0.4

Section- C

III. Answer any eight of the following questions: ***8X 5=40***

25. Write the characteristics of statistics.
26. Compare census survey and sample survey with their merits.
27. For the following data, prepare a frequency distribution with suitable exclusive class intervals.
    3,8,7,7,5,6,15,19,7,3,5,4,13,8,12,16,7,10,4,2,11,9,16,1,12,4,7,12,14,11,13,18,19,11,9,15,10,17,11,8,9,1,18,11,12,16,13,19,2,9,4,14,17,18,10,5,12,14,4,2.
28. Draw pie diagram for the following data.

Items of expenditure	Food	Cloth	Rent	Fuel & light	Others
Expenditure (Rs)	2500	800	1500	500	1500

29. Following is the data regarding monthly income of certain shops. Find mean income

Income(000's)	0-5	5-10	10-15	15-20	20-25	25-30
No of shops	3	5	12	8	6	2

30. Draw a scatter diagram to correlation exists between the variables from the following data:

X	6	12	18	15	21	22	13
Y	4	10	12	13	18	20	15

31. For the following bivariate data, find y when x=8. The coefficient of correlation is 0.8:

	X	Y
Mean	10	15
SD	2	3

32. Out of 250 literatures in a village, number of smokers was 80, where as out of 150 illiterates in the same city, 70 were smokers. Find Yule's coefficient of association.
33. Using Binomial expansion method, interpolate the value for the year 2011

Year	2008	2009	2010	2011	2012	2013
Value	10	5	20	?	42	50

34. State and prove addition theorem of probability for any events.
35. A box has 4 white and 5 black balls. Two balls are randomly drawn. Find the probability that they are white if the balls are drawn
    i) One after the other with replacement
    ii) One after the other without replacement.
36. State and prove that multiplication theorem for two random variables.

Section- D

IV. ***Answer any two of the following questions:*** ***2X10=20***

37. Calculate mode for the following data

Class interval	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	4	13	8	16	11	16	8

38. For the following bivariate data on x and y.

Length of life of tyres (000'kms)	Firm A	Firm B
15-19	5	3
20-24	8	11
25-29	13	12
30-34	4	4

i) Which firm tyres have higher average life?
ii) Which firm tyres shows greater consistency regarding length of life?

39. For the following bivariate data on x and y.

X	90	100	75	60	50	45	80
Y	60	90	80	90	50	50	70

i) Find two regression equations
ii) Find the value of x, if y=75
iii) Find the value of y, if x=85

40. For the following joint probability distribution, find K and the coefficient of correlation

x/y	-1	0	1
2	0.2	0	0.4
4	0.1	0.1	K

Section- E

V. Answer any two of the following questions: ***2X5=10***

41. Draft a blank table to show the expenditures of three families A, B and C according to their expenditures: Food, clothing, rent, fuel and light.

42. Draw histogram and obtain the frequency polygon for the following distribution.

Class interval	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Frequency	2	5	10	14	12	8	4

43. For the following data, find the missing frequency if median is 38.14.

Class interval	20-24	25-29	30-34	35-39	40-44	45-49	50-54
Frequency	2	5	9	-	12	8	4

44. Probability of a person 'A' hitting the target is 3/4, whereas probability of hitting a target by another person 'B' is 2/3. Find the probability of target being hit when both fire once at a target.

****