JAIN COLLEGE

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

Date: Dec-2017 ***SUBJECT: STATISTICS***

I PUC
MOCK

Timings Allowed: 3Hrs. ***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 Croxton and Cowdens'definition for statistics.
2. Define Sample.
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 Histogram?
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. What are the first order frequencies in association of attributes?
11. What is the probability of sample space?
12. Find V(a).

Section- B

II. Answer any ten of the following questions: ***10X2=20***

13. What are Qualitative and Quantitative characteristics?
14. Write any 2 methods of Sampling?
15. Define Inclusive and Exclusive Class intervals.
16. What are Captions and Stubs of a table?
17. Write down a use and a limitation of diagrams and graphs.
18. What is an ogive curve?
19. Find median for the following data.
    30, 20, 50,10,60,110,20
20. For a distribution S.D =8 and C.V = 18%, find the mean.
21. For a set of 8-paired observations, a square of the difference of ranks is 24. Find rank correlation coefficient.
22. Mention two methods of measuring association of attributes.
23. Define classical approach of probability.
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: ***8 X 5 = 40***

25. Write the functions of statistics.
26. Compare census survey and sample survey with their merits.
27. Tabulate the following data about the coffee drinking habit in two towns A and B:

Town A	Town B
55% were males. 28% were coffee drinkers. 18% were male coffee drinkers	52% were males. 25% were coffee drinkers. 16% were male coffee drinkers

28. Draw a multiple bar diagram to represent the production of wheat and rice of a region for the years given below:

Year		2005	2006	2007	2008	2009	2010
Production (In metric tons)	Wheat	12	15	18	19	22	26
	Rice	25	30	32	36	40	45

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. Find Spearman's rank correlation for the following sales of two different weeks.

Representatives	1	2	3	4	5	6
I week sales	60	110	65	40	70	20
II week sales	90	100	80	30	70	20

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

i) Find the two regression equations
ii) Estimate the value of x when y=20

32. In a coeducational institution out of 200 students, 150 were boys. They wrote an examination and it was found that 120 passed. 10 girls failed. Is there any association between gender and success in examination?

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 contains 5 red and 3 white balls. Two balls are drawn from the box randomly. What is the probability that they are of i) same color ii) different color
36. State and prove that multiplication theorem for two random variables.

Section- D

IV. Answer any two of the following questions: ***2 X 10 =20***

37. Calculate Bowley's coefficient of skewness for the following distribution

Age (years)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No of persons	18	16	15	12	10	7	3	1

38. Scores of two golfers in 10 rounds were as follows

Golfer (A)	74	75	78	72	77	79	81	76	73	71	71	73
Golfer (B)	86	84	80	88	89	85	86	82	83	70	71	70

Find out which golfer scores more and who may be considered to be a more consistent player.

39. Calculate Karl Pearson coefficient of correlation for the data given below on food expenditure and family income.

Food expenditure	Family Income ('000Rs)				
	20-30	30-40	40-50	50-60	60-70
10-15	-	-	-	3	7
15-20	-	4	9	4	3
20-25	7	6	12	5	-
25-30	3	10	19	8	-

40. a) 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.
b) An urn contains 6 red and 4 white balls. 3 balls are drawn at random from the urn. Obtain the probability distribution of number of white balls drawn.

Section- E

V. Answer any two of the following questions: ***2 X 5 = 10***

41. Following are the marks obtained by students in a certain test. Prepare a frequency distribution with an interval mark of 10 each using inclusive class intervals.

37	49	54	51	37	15	12	33	23	25	18	35	33	42	45
55	69	63	46	29	18	37	46	59	29	35	27	45	47	65

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 33.

Class interval	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	12	30	34	65	-	25	18

44. Find the expectation of the product of numbers obtained in the throw of 2 dice.

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