JAIN COLLEGE, J C Road Bangalore
Mock Paper January - 2017
I PUC – Statistics (31)

I. *Answer ALL the* questions

1. Mention any one application of statistics in Commerce
2. Give one example on Ordinal scale.
3. When would you prefer sample survey to census method?
4. Give a general Performa of a statistical table.
5. What do you mean by open-end class interval? when are they preferred?
6. Which diagram is mostly used by the government to present their annual budget?
7. If the product of two numbers is 36 then find G.M.
8. 3^{rd} quartile is equivalent to which percentile in the same data?
9. Write one assumption in Binomial method of interpretation .
10. What is relation between correlation and the two standard deviations in regression in regression coefficient of Y on X.
11. Define equally likely events in probability.
12. If $E(X)=3$ and $E(X^2)=25$ then find $SD(X)$.

SECTION B

II. *Answer ALL the* questions

13. Define variable and attribute with example.
14. Distinguish between census enumeration and sample survey.
15. For what purpose is correction factor used in frequency distribution?
16. What are the source and foot note are meant for in the table?
17. How diagrams and graphs are useful in representing statistical data?
18. With the help of histogram which more types curves we can draw?
19. Find the harmonic mean of 2 and 4.
20. What do you mean by measures of position or positional averages .Mention different measures.
21. From the following data find the suitable regression equation $X=21, Y=20$ and $b_{xy}=0.74$.
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. Find the probability of getting a king or a qeen from a pack of playing cards.
24. If a and b are two constants and X is a random variable show that $E(aX+b)=aE(X)+b$.

SECTION C

III. *Answer ALL the* questions

25. Write the functions of statistics.
26. Explain any three methods of collection of primary data. What are their relative merits and demerits.
27. In Hubli there were 20 lakh people , out of this 7 lakh people lived in central Hubli and the rest in surrounding areas . In central Hubli there were 3 lakh male people out of which 2 lakh were literate In central Hubli ,1 lakh ladies were illiterates In surrounding areas there were 10 lakh male people ,out of which 7 lakh were literate.In surrounding areas literate ladies were 2 lakh tabulate the above information.
28. Represent the following data by a percentage bar diagram

Items of Expenditure	Family A (Rs)	Family B (Rs)
Food	1500	1500
Clothing	1250	600
Education	250	500
Others	190	700

29. Calculate Median for the following data

CI	Lessthan 145	145-150	150-155	155-160	160 & above
No of persons	5	10	15	10	5

30. The following are the weights of 10 mothers and their babies at the time of delivery. Calculate the coefficient of correlation.

Mother (kgs)	56	60	59	49	53	52	47	58	54	62
Baby (kgs)	3.1	3.3	3.2	3	3.1	3	2.7	3.4	3.2	3.6

31. Caluculate Spearman's rank correlation coeffiecint from the following data

X	18	16	20	22	12	24	15	20	17	20	23
Y	15	21	18	23	20	24	16	17	19	25	22

32. In a co education institutuion, 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 the Binomial Expansion method of interpolation find the probable production for the year 2002.

Year	2000	2001	2002	2003	2004	2005
Producation(000'tones)	39	85	-	151	264	388

34. State and Prove addition theorem of probability for two mutually Exclusive event.
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. A fair die is thrown once .A person will get 5 Rs if the die results in multiplying 3 otherwise he loses 2 Rs Find his expectations.

SECTION D

IV. *Answer ALL the* questions

37. For the following data regarding the marks obtained by Boys and girls .

CI	10-20	20-30	30-40	40-50
Boys	6	16	26	18
Girls	5	12	22	13

(i) Which among them have higher average marks.
(ii) Which among shows greater consistency regarding scoring marks.

38. Calculate Bowley's Coeffient of Skewnes

Height	<130	<140	<150	<160	<170	<180	<190
No of presons	2	7	15	25	32	37	40

39. For the following data
    a. Calculate two regression equations
    b. Estimate the value of X when Y=30
    c. Determine the value of correlation coefficient using Regression Coefficient.

X	10	14	16	24	26
Y	5	6	7	9	13

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

Y / X	-1	0	1
2	0.2	0	0.4
4	0.1	0.1	K

SECTION E

V. *Answer ALL the* questions

41. Following is the data regarding the marks obtained by a certain group of girls in a class in statistics test.

13	24	11	21	16	22	24	22	22	16
21	11	22	18	25	16	21	17	22	18
21	13	22	18	20	15	21	17	23	15

Prepare a frequency table.

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

CI	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Freq	2	5	10	14	2	8	4

Find the value of median and mode.

43. Calculate D7 and P20 for the following distribution.

I	40-59	60-79	80-89	90-99	100-109	110-119	120-139	140-159
F	5	16	16	16	16	16	16	16

44. Two dice are thrown once .Find the probability of
    (i) sum of numbers obtained is divisible by 5
    (ii) sum of number obtained is 5
    (iii) product of numbers obtained is 5
    (iv) product of numbers obtained is divisible by 5
    (v) sum of numbers obtained is 13.