I PUC - STATISTICS

MODEL QUESTION PAPER-1 (FOR REDUCED SYLLABUS 2020-21)

Time: 3hr.15mts   **Max Marks: 100**

Note
  i.   *Graph sheets and statistical tables will be supplied on request*
  ii.   *Scientific calculators may be used*
  iii.   *All working steps should be clearly shown*

SECTION – A

I.   Answer any ten of the following questions   **10x1=10**

1. Define croxton and cowden definition of statistics
2. Does statistics deal with Individual data?
3. What is statistical enquiry?
4. What is a schedule?
5. Define frequency.
6. What is bi-variate frequency distribution?
7. What is one dimensional bar diagram?
8. Mention a demerit of graph.
9. Are Q_2, D_5 and P_{50} equal?
10. Name the type of correlation when r = +1.
11. How are correlation and regression coefficients related?
12. Write an assumption of Interpolation.

SECTION – B

II. Answer any ten of the following questions   **10x2=20**

13. Mention two fields where statistics is used.
14. Define attribute. Give an example.
15. Mention two sources of secondary data.
16. Mention a merit and demerit of census enumeration.
17. Define temporal classification with the help of an example.
18. Convert the following inclusive class intervals into exclusive class intervals.

C.I	10-19	20-29	30-39	40-49	50-59

19. Mention two needs of diagrams.
20. Name the graphs used in the location of mode and median.
21. If mean = 20; S.D = 5. Find C.V.
22. If Cov(x,y) = -100; V(X) = 400; S.D(Y) = 5. Find rxy
23. Mention two properties of regression lines.
24. Name the different methods of measurement of association of attribute.

SECTION – C

III. **Answer any eight of the following questions.**   8X5=40

25. Mention the functions of Statistics.

26. Mention the methods of collection of primary data, and explain any two of them.

27. In a sample study regarding literate persons in an area, the following data was obtained
     - Male population = 58%
     - Literates = 70%
     - Male Literates = 50%

     Tabulate the above data

28. Draw multiple bar diagram for the following table strength of students

Year/ Language	Kannada	Sanskrit	Hindi
2010	400	200	80
2011	500	150	100

29. The median of the following distribution is 24, find the missing frequency.

C I	0-10	10-20	20-30	30-40	40-50
f	5	25	-	18	7

30. If x : 4, 25. Then show that A.M > G.M > H.M

31. Calculate first quartile and sixth decile from the following data

x	58	59	60	61	62	63	64	65	66
f	2	3	6	15	10	5	4	3	2

32. Compute M.D from median and its relative measure for the following data
     X: 37, 45, 52, 46, 56, 40, 47, 55, 43.

33. Obtain spearman's rank correlation coefficient from the ranks allotted by 2 judges,

Paintings	1	2	3	4	5	6
Ranks (I Judge)	6	2	1	3	5	4
Ranks (II Judge)	4	1	3	5	6	2

34. Following are the marks scored by students in Kannada and English in an examination.
     Estimate the marks in Kannada when the marks in English is 30

	Kannada	English
Mean Marks	40	50
S.D of Marks	10	16

Co-efficient of correlation = 0.3.

35. Following table gives the results of BCG vaccine against TB given to infants in a hospital.

	Not attacked	Attacked
Vaccinated	431	5
Not Vaccinated	291	9

Compute Yule's co-efficient of association and conclude

36. Extrapolate the sales for the year 2015

Year	2010	2011	2012	2013	2014	2015
Sales (000)	13	19	25	38	65	?

SECTION – D

IV. Answer any two of the following questions   **2x10 = 20**

37. Find median and mode from the following distribution

Daily wages	200-400	400-600	600-800	800-1000	1000-1200	1200-1400
No of workers	6	9	15	10	7	3

38. Find co-efficient of variation from the following data

Marks	<10	<20	<30	<40	<50	<60	<70	<80
No of Students	12	30	65	107	157	202	222	230

39. Calculate co-efficient of skewness based on quartiles to the data given below

C.I	10- 19	20-29	30-39	40-49	50-59	60-69
f	5	8	15	17	6	2

40. Find the two regression lines from the data given below

x	3	6	5	4	4	6	7	5
y	3	2	3	5	3	6	6	4

Also find correlation co-efficient.

SECTION – E

V. Answer any two of the following questions   **2x5=10**

41. Prepare a frequency distribution using 5 as class width using exclusive method for theprice of 32 items

67	60	69	70	62	63	69	70
58	50	57	54	55	70	60	70
60	65	70	56	67	58	60	59
61	63	69	67	61	60	59	57

42. Draw a frequency polygon following data.

Marks	<20	<40	<60	<80	<100
No of Students	10	40	80	100	110

43. Calculate G.M from the given data

X	5	10	15	20	25	30
Y	3	7	12	8	5	1

44. The regression equation of y on x is 4y = 9x + 15
    The regression equation of x on y is 25x = 6y + 7
    Find the mean values of $\bar{x}$, $\bar{y}$ and r.

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I PUC – STATISTICS
MODEL QUESTION PAPER – 2 (REDUCED SYLLABUS 2020-21)

Time: 3hr.15mts   **Max Marks: 100**

Note

   i.   *Graph sheets and statistical tables will be supplied on request*

   ii.   *Scientific calculators may be used*

   iii.   *All working steps should be clearly shown*

SECTION – A

I.   **Answer any ten of the following questions.**   **10x1=10**

1. Write down Bowley's definition of Statistics.
2. Give an example for Nominal scale.
3. Who is an Investigator?
4. Give an example for published source of secondary data.
5. What does Stub represent in a table.
6. Define class width.
7. Name the Average located by ogive curves.
8. Mention a merit of Diagram.
9. Find Range from x : 7,12,25,18,35.
10. What is the value of r for two independent variables?
11. If $\sum d^2 = 0$. What is the value of ρ?
12. Define Interpolation.

SECTION – B

II. **Answer any ten of the following questions**   **10x2=20**

13. Mention two functions of Statistics.
14. Mention the type of variable seen in,
   a. No of deaths due to COVID-19
   b. Daily temperature
15. Mention two stages of Statistical Enquiry.
16. Mention two methods of sampling.
17. Mention two objectives of classification.
18. Define Qualitative classification. Give an example.
19. Mention any 2 one dimensional diagrams.
20. Name two graphs which are located with the help of histogram.
21. For a distribution, the sum of lower and upper qualities is 50 and their difference is 10. Find the coefficient of Q.D.
22. Mention any two uses of correlation coefficient.
23. If $b_{xy} = 0.6$; r = 0.75. S.D (X) = 3. Find S.D (Y)

24. Bring out the difference between co-efficient of correlation and association of attributes.

SECTION – C

III. Answer any eight of the following questions.   **8X5=40**

25. Mention five characteristics of Statistics.
26. What are the guidelines for the construction of questionnaire?
27. Prepare a blank table to show the distribution of students according to
    a. Gender : Boys, Girls
    b. College Type: Aided, Unaided
    c. Faculty: Arts, Commerce, Science

28. Represent the following data by percentage bar diagram.

Subject	Student A	Student B
Language	72	82
English	85	92
Economics	88	90
Business Studies	90	87
Accountancy	94	98
Statistics	97	95
TOTAL	526	544

29. Mean of the following distribution is 50. Find the missing frequency.

CI	0-20	20-40	40-60	60-80	80-100
f	19	28	32	-	19

30. Calculate Harmonic Mean from the below data.

X	12	14	16	18	20
f	3	5	9	4	2

31. Compute coefficient of Q.D from the data given.

X	2	4	6	8	10	12
f	3	5	10	12	6	4

32. Find combined standard deviation from the following table.

	I Sample	II Sample
No of observations	50	100
Mean	54.1	50.3
S.D	8	7

33.   Calculate spearman rank correlation coefficient from the following data.

X	80	78	75	75	68	67	60	59
y	12	13	14	14	14	16	15	17

34.   Obtain the regression equation of y on x. Estimate the value of y when x = 9

x	3	6	5	4	4	6	7	5
y	3	2	3	5	3	6	6	4

35.   88 residents of a colony were interviewed during a sample survey and were classified according to smoking and tea drinking habits. Find Yule's coefficient of association and conclude.

	Smokers	Non smokers
Tea drinkers	40	33
Non tea drinkers	3	12

36.   Interpolate the missing value.

Year	2008	2009	2010	2011	2012
value	4	6	?	8	12

SECTION – D

IV. Answer any two of the following questions   **2x10 = 20**

37.   Calculate Mean deviation from median from the following data.

CI	10-20	20-30	30-40	40-50	50-60
f	5	10	20	15	6

38.   Following are the runs scored by two cricketers in 8 innings.

Innings	1	2	3	4	5	6	7	8
Cricketer A	25	50	10	45	32	50	25	80
Cricketer B	35	10	15	60	38	95	40	75

   a. Which of the two cricketers is better scorer on an average?
   b. Who is more consistent?

39.   Calculate Karl Pearson's coefficient of skewness from the following data.

Marks scored	0-20	20-40	40-60	60-80	80-100
No of students	8	12	30	20	10

40.   Calculate Karl Pearson's coefficient of correlation from the following table.

x\y	115	120	125	130
10	-	-	6	11
20	-	2	4	10
30	-	3	1	5
40	3	2	3	1
50	10	4	5	-

SECTION – E

V. Answer any two of the following questions.   **2x5=10**

41. The following data gives the number of students who were off-line among 40 on-line classes conducted.

6	7	5	7	6	3	9	8	6	7	5	7	6	8	5	8	5	9	5	6
5	9	6	6	4	4	7	5	5	8	5	3	3	8	4	4	3	4	4	3

Prepare a frequency distribution.

42. Draw Histogram for the following data and hence obtain mode graphically

Price	100-150	150-200	200-250	250-300	300-350
No of items	5	10	20	8	6

43. Find 9th decile and 55th percentile for the following data.

C.I	1-3	3-5	5-7	7-9	9-11	11-13	13-15
f	6	53	85	56	21	16	4

44. Calculate Karl Pearson's correlation coefficient from the following data.

X	12	9	8	10	11	13	7
y	14	8	6	9	11	12	3

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I PUC - STATISTICS
MODEL QUESTION PAPER - 3 (REDUCED SYLLABUS 2020-21)

Time: 3hr.15mts   Max Marks: 100

Note
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SECTION – A

VI.   Answer any ten of the following questions.   10x1=10

1.   Define Statistics in plural sense.
2.   What is sample?
3.   What is a Strata?
4.   Define Pilot Survey.
5.   Mention a objective of Classification.
6.   What is Tabulation?
7.   In which bar diagram all the bars have equal length?
8.   What is false base lines.
9.   Find the Mode of the following series : 20,10,8,15,22,15,18,15
10. What is Kurtosis?
11. If Cov (x,y) = 0 then find the r ?
12. Define Extrapolation.

SECTION – B

VII.   Answer any ten of the following questions.   10x2=20

13. Mention any two limitations of Statistics.
14. State the methods of measurement of Errors.
15. What is Open End Classes? Give an Example.
16.   Write any two importance of Statistics Table.
17.   List out any two general rules of Diagrams.
18. Distinguish between Diagrams and Graphs.
19. Write any two properties of A.M.
20. If Mean = 450 and Mode = 500 then find Median?
21.   Find Q_1 to the following data: 28, 55, 41, 15, 39, 65, 07, 84.
22.   Mention the types of Correlations.
23.   If $\sum (x - \bar{x})^2 = 160, \sum (y - \bar{y})^2 = 438, \sum (x - \bar{x})(y - \bar{y}) = 240$ then find r_{xy} ?
24. Write the second order frequencies of Association of Attributes.

SECTION – C

VIII. Answer any eight of the following questions. 8X5=40

25. Write any 3 causes of distrust of Statistics and 2 remedies to remove distrust of Statistics.

26. List out the points regarding planning and preparation of statistical survey.

27. Tabulate the following data.

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

28. The following data relates to the monthly expenditure (in Rs) of two families A and B.

Items of Expenditure	Expenditure (in Rs)	
	Family A	Family B
Food	2000	2500
Clothing	1000	2000
Rent	800	1000
Light and Fuel	400	500
Miscellaneous	800	2000

Represent the data by a Sub-divided Bar Diagram.

29. Find the G.M of the following data.

Variable	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	7	13	30	22	11	7

30. Find the 90th Percentile for the following distribution.

C – I	10 – 30	30 – 50	50 – 70	70 – 90	90 – 110	110 – 130	130 – 150
f	6	22	35	46	21	16	4

31. Calculate Mean Deviation from Mode to the following data.

Marks	10	11	12	13
No. Of students	3	12	18	12

32. Calculate Standard Deviation to the following series :
   25, 50, 45, 30, 70, 42, 36, 48, 34, 60

33. Calculate the Spearman's Rank Correlation Coefficient for the following data.

X	35	37	38	42	44	46	51	54	55	56
Y	40	32	39	42	41	31	50	52	46	55

34. Find the Regression Co-efficients to the following data.

X	11	7	9	5	8	6	10
Y	7	5	3	2	6	4	8

35. 2000 candidates appeared for a competitive examination. 400 came out successful. 350 had attended a coaching class and of these 200 had come out successful. Estimate the utility of coaching classes, using Yule's Co-efficient of Association.

36. Interpolate the index for 2017 from the following data.

Year	2015	2016	2017	2018	2019
Index Number	278	281	?	313	322

SECTION – D

IX. **Answer any two of the following questions** **10x2=20**

37. Calculate Quartile Deviation and its Co-efficient to the following data.

Weight (gm)	410-420	420-430	430-440	440-450	450-460	460-470	470-480
No.of Mangoes	10	20	42	54	45	18	7

38. Goals scored by two teams A and B in foot ball season are as follows:

No. of Goals Scored in a Match (X)	No. of Matches	
	Team – A	Team - B
0	22	11
1	8	10
2	7	8
3	8	7
4	3	4

Find which team is more consistent in scoring.

39. Calculate Skewness based on Mean, Median and S.D to the following data.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Students	10	40	20	0	10	40	16	14

40. Calculate the Karl Pearson's coefficient of correlation between Age of Students and Marks obtained in a certain test and interpret.

Marks	Age (In Years)				
	18	19	20	21	22
0-5	-	-	-	3	1
5-10	-	-	-	3	2
10-15	-	-	7	10	-
15-20	-	5	4	-	-
20-25	3	2	-	-	-

SECTION – E

X.   Answer any two of the following questions
    5x2=10

41. No. of Teaching staff working in 20 different colleges was recorded as below.
    15,12,18,10,15, 12, 20, 25, 18, 10, 15, 12, 15, 20, 25, 15, 18, 20, 15, 18
    Prepare a Frequency Distribution Table.

42. From the following data, draw a less than ogive and locate Lower and Upper Quartile graphically.

Marks	< 10	< 20	< 30	< 40	< 50	< 60
No. of Students	5	13	24	39	52	60

43. Calculate Harmonic Mean to the following data.

C - I	0-10	10-20	20-30	30-40	40-50
f	4	8	10	6	7

44. Given the following data

	X	Y
A.M	36	85
S.D	11	8

Correlation coefficient between X and Y is 0.66. Estimate the value of X when Y = 75.

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