SECTION A

I. *Answer ALL the* **questions. Each carries one mark.**

1. Write the croxton and cowden definition for statistics?
2. Define width of the class?
3. Name the average obtained by ogives?
4. Define histogram?
5. Define relative frequency?
6. Which average would be suitable in the following case:-Average intelligence of students in a class?
7. If sum of 2 observations is 480 find mean?
8. For data if Q2= 20 what are the values of D5 and P50?
9. Write the relationship between correlation coefficient and regression coefficient?
10. Define interpolation?
11. Define conditional probability?
12. IF E(X)=5 then find E(5X+7)?

SECTION B

II. *Answer ALL the* **questions each carries two mark.**

13. Define variable and attribute?
14. Mention two stages of statistical investigation?
15. Mention the differences between inclusive and exclusive class interval with example?
16. Mention the functions of statistics?
17. What is stubs and captions?
18. What are partition values? name any two partition value?
19. What are the different types of classification?
20. For a data, if median is 50 and mean deviation from median is 12, then find its coefficient?
21. What are regression lines? Where do they intersect?
22. In case of two attributes, if N=250,(AB)= 30,(A)=100 and (B)=50, then find the remaining frequencies?
23. Two cards are drawn from the pack of 52 playing cards. What is the probability that they are kings?
24. If E(X) =32 and $E(X^2)$= 25 then find SD(X)

SECTION C

III. *Answer ALL the* **questions. Each carries five mark.**

25. Explain the characteristics of statistics?
26. What is primary data and explain the methods of collection of primary data?
27. In a state there were 30 lakh people out of these, 10 lakh people live in urban areas and the rest in rural areas. In urban areas there were 7 lakh people, out if which 2.5 lakh are illiterate. In urban areas 2 lakh ladies were illiterates. In rural areas there were 15 lakh male people out of which 5 lakh were literate, in rural areas related ladies were 3 lakh. Tabulate the above information.
28. Following are the marks obtained by two students A and B in an annual examination. Represent data by percentage bar diagram.

Subjects	Marks of Students	
	Student A	Student B
Kannada	72	82
English	85	92
Statistics	97	95
Economics	88	90
Business	90	87
Accountancy	94	98
Total	526	544

29. Calculate the geometric mean for the following frequency distribution

C-I	0-10	10-20	20-30	30-40	40-50
f	8	12	20	6	4

30. Calculate spearman's rank correlation coefficient for the following data

x	36	41	46	59	46	65	31	68	41	70
y	48	60	53	36	50	42	66	44	58	66

31. Write difference between correlation and regression analysis
32. Calculate Yule's coefficient of association between marriage and failure of student from the following data pertaining to 525 students

	Passed	Failed
Married	90	65
Unmarried	260	110

33. In the following table the values of X represent the degree of freedom and the Y values represent the chi-square values at 5% level of significance .Find the missing value

x	2	3	4	5	6	7
y	5.99	7.81	9.49	11.07	?	14.07

34. State and prove additional theorem of probability for two non-mutually exclusive events.
35. Bag contains 6 red and 4 white marbles. 3 marbles are drawn from the bag. What is the probability that i)they are of the same colour , ii) One is red iii) 2 is white iii) 3 is red iv) 2 is white
36. For the following probability distribution find
    1. $V(-X)$
    2. $E(X^2)$
    3. $E(2X+3)$
    4. $Var(2X+3)$
    5. $S.D(2X+3)$

X	0	1	2	3
P(x)	1/8	3/8	3/8	1/8

SECTION D
IV. *Answer ALL the* **questions. Each carries ten mark.**

37. Compare the variation and averages for the following distribution regarding expenditure on food of families in two different places

Expenditure per month	Number of families	
	Place A	Please B
600-800	25	32
800-1000	42	65
1000-1200	68	84
1200-1400	152	124
1400-1600	53	30

38. Calculate pearson's coefficient of skewness from the data given below

Life	300-400	400-500	500-600	600-700	700-800	800-900	900-1000	1000-1100	1100-1200
Number of bulbs	14	46	58	76	68	62	48	22	6

39. Following is the distribution of students according to their height (x) and weight (y) find the regression equation of x on y ?

Height	Weight			
	90-100	100-110	110-120	120-130
50-55	4	7	5	2
55-60	6	10	7	4
60-65	6	12	10	7
65-70	3	8	6	3

40.
1. A bag has 3 balls out of which 2 are white. Another bag has 4 balls out of which 1 is white. From each of the bags 1 ball is drawn at random. Find the probability that both the balls drawn are white
2. Prove that   E(aX+b)=aE(X)+b , E(a)=a , E(aX)=aE(X)

SECTION E

V. ***Answer ALL the* questions. Each carries five marks.**

41. The data given below related to height and weight of 20 persons. Construct a bivariate frequency table with class interval for height as 115-125, 125-135….. and weight as 62-64, 64-66 …….. Then write the marginal distribution of X and Y.

Sl.no	1	2	3	4	5	6	7	8	9	10
Height	170	135	136	137	148	121	117	128	143	129
Weight	70	65	65	64	69	63	65	70	71	62

Sl.no	11	12	13	14	15	16	17	18	19	20
Height	163	139	122	134	140	132	120	148	129	152
Weight	70	67	63	68	67	69	65	68	67	67

42. Draw a histogram for the following data and hence locate the value of mode and verify.

Marks	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No of students	2	6	8	25	40	30	20	8

43. Calculate the harmonic mean for the following distribution

C.I	0-5	5-10	10-15	15-20	20-25
f	20	25	32	28	18

44. Find k, mean and variance of the following distribution

X	-3	-2	0	2	3
p(x)	k/6	k/2	2k/3	k/2	k/6

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