SRI BHAGAWAN MAHAVEER JAIN COLLEGE Vishweshwarapuram, Bangalore. **I PUC Mock Question paper**	**Course:**	I PUC
	Subject:	Statistics
	Max. Marks:	100
	Duration:	3:15 hrs

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** **10 x 1 = 10**

1 Define population.

2 Give an example for ordinal data.

3 Who is an Enumerator?

4 Define Frequency distribution.

5 Mention one objective of averaging.

6 If the product of two numbers is 150. Find Geometric mean.

7 Give the formula for relative measure of Quartile Deviation.

8 Mention the type of correction between speed of a vehicle and distance covered by it.

9 Write the relation between the coefficient of correlation and the standard deviations in regression coefficient of x and y.

10 What is interpolation?

11 What is P(A∪B), if A and B are mutually exclusive events?

12 If E (X)=8, then find E(3X-5).

SECTION-B

II **Answer any TEN of the following questions** **10 x 2 = 20**

13 What is a continuous variable? Give an example.

14 What are called as the difference between the upper and the lower limit of a class and the average of the upper and the lower limits?

15 What is qualitative classification of data? Give an example.

16 Write down two objectives of tabulation.

17 If the minimum value in a data is 9 and its range is 57, then find the maximum value of the data.

18 Find the mode of the following distribution.

X	5	10	15	20	25
F	2	7	12	10	6

19 For a data, if median is 50 and mean deviation from median is 12, then find the coefficient of mean deviation.

20 Prove that $r = \pm\sqrt{bxy.byx}$.

21 If $\sum\left(x-\bar{x}\right)^2 = 6000$, $\sum\left(y-\bar{y}\right)^2 = 920$ and $\sum\left(x-\bar{x}\right)\left(y-\bar{y}\right) = 240$, Find r_{xy}.

22 If in a 2 x 2 contingency table frequencies of first order (A) = 130,(α)=50, (B) = 120 and β = (100) find the total frequency?

23 Find the probability of getting an even number when a die is thrown once.

24 If E(x) = 3.5, E (y) = 2 and E(xy)=8, find Cov (x,y).

SECTION-C

III **Answer any EIGHT of the following questions.** **8 x 5 = 40**

25 Mention the methods of collection of primary data with their relative merits and demerits

26 What are the methods of sampling? Explain any two.

27 In the year 2010 in Bangalore 1200 accidents occurred, of all the accidents 918 were fatal deaths. Out of total accidents 450 were bike accidents, 380 ends in death, 150 accidents due to auto and car ends with 58 deaths. Remaining accidents were by buses of which 80% accidents were deaths .Tabulate the above information.

28 Following is the data regarding strength of a college. Draw percentage bar diagram for this data.

Academic Year	Male	Female	Total
2009-2010	350	150	500
2010-2011	800	200	1000
2011-2012	1200	800	2000
2012-2013	1000	1000	2000

29 Find the missing frequency in the following frequency distribution if $\bar{x} = 129$.

Class Interval	80-100	100-120	120-140	140-160	160-180
Frequency	8	22	-	14	10

30 Following are the marks obtained by eight students in two subjects as given below.

Students		1	2	3	4	5	6	7	8
Marks	Accountancy	46	65	86	69	75	48	70	68
	Statistics	55	54	77	75	66	55	60	52

Calculate Spearman's rank correlation coefficient.

31 If the two regression equations are $3x + 5y = 3$ and $4x + 3y = 4$, find the mean values of x and y. Also the coefficient of correlation between x and y.

32 Interpolate the index Number for 2008 from the following data.

Year	2006	2007	2008	2009	2010
Index Number	278	281	-	313	322

33 200 candidates appeared for II PUC examination in a college and 60 of them succeeded, 35 received a special coaching or tutorial class and out of them 20 candidates succeeded. Using Yule's coefficient discuss whether the special coaching is effective or not.

34 State and prove multiplication theorem of probability for two dependent events.

35 A purse contains 4 silver and 2 gold coins. Another purse contains 3 silver and 4 gold coins. If a coin is selected at random from one of the two purses, what is the probability that it is a silver coin?

36 If X is a random variable and 'a' is any constant, then prove that E (ax) = a E(x) and Var (ax)= a^2 Var(x).

SECTION-D

IV Answer any TWO of the following questions. 2 x 10 = 20

37 Following is the data regarding the prices (₹) of onion in Bangalore and Chitradurga, collected in 6 weeks on every Monday of market day.

Bangalore	62	55	68	70	64	50
Chitradurga	45	30	35	40	42	32

i) Which town shows more price on average?

ii) Which town shows more consistency?

38 Calculate Pearson's coefficient of Skewness from the data given below.

Life (Hrs)	300-400	400-500	500-600	600-700	700-800	800-900	900-1000	1000-1100	1100-1200
No of bulbs	14	46	58	76	68	62	48	22	6

39 From the following data regarding the amount of rainfall(x) and the production of rice(y).
i) Find the most likely production corresponding to rainfall of 50 cms.
ii) Find the most likely rainfall corresponding to the production of 45 quintals.

	Rainfall (cms)	Production (quintals)
Mean	30	40
Variance	25	64

Coefficient of correlation=0.6

40 a) The probabilities of two students A and B solving a problem are $\frac{2}{5}$ and $\frac{4}{7}$. Find the probability that if both try to solve the problem independently.
i) the problem is solved (ii) none of them solves.

b) For the following probability distribution, find the value of k, mean and variance.

x	3	2	0	-2	3
P(x)	$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{4}$	k	$\frac{1}{6}$

SECTION-E
(Practical Oriented Questions)

V Answer any TWO of the following questions. 2 x 5 = 10

41 For the following ages of children prepare a frequency table

Ages (years):	2.5	3.2	2.8	2.4	2.3	2.0	3.1	3.6	4.1	4.9	3.6	4.2
	3.7	3.5	2.7	2.8	2.7	2.9	3.4	4.5	4.8	4.6	4.3	4.2

42 From the following data, draw a less than ogive and locate the values of Q_4 and Q_3 graphically.

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

43 Calculate Harmonic mean for the following distribution.

Age (in year)	0-5	5-10	10-15	15-20	20-25
No. of Persons	20	25	32	28	18

44 There are 10 tickets in a bag which are numbered 1,2,3,…….10. Two tickets are drawn randomly one after the other with replacement. Find the expectation of the sum of the numbers drawn.

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