

Marks : Below	10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	Above 80
No. of Students:	7	15	18	25	30	20	16	7	2

Find the Mean and Median for the above data.
Also compute Q_3 , P_{80} and D_6 . (18)

7. (a) From the following data calculate price index numbers for 2021 with 2020 as base by (i) Laspeyre's method (ii) Paasche's method (iii) Marshall-Edgeworth's method

Commodity	2020 Price	2020 Quantity	2021 Price	2021 Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

- (b) What do you mean by Cost of living index? Explain the uses of Cost-of-living index. (18)

8. (a) Define Kurtosis. Also explain its types.
(b) What is a normal distribution? Explain the central limit theorem.
(c) Three dice are rolled simultaneously. What is the probability of getting the same number on all the three? (18)

(500)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1099 D

Unique Paper Code : 6132351102

Name of the Paper : Statistics for Insurance

Name of the Course : B.A. (VS) MMI (1.2)

Semester : I

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. (a) "Statistics is an art as well as science". Justify.
(b) Define statistics and parameters. Discuss the importance of statistics in various fields and explain its limitations. (18)

2. A purchasing agent buys lamps from two companies, A Ltd. and B Ltd. He tested the sample of lamps for

P.T.O.

their length of life which were recorded as follows :

Length of life (in hours)	700-900	900-1100	1100-1300	1300-1500
No. of Lamps (from A Ltd)	10	16	26	8
No. of Lamps (from B Ltd)	3	42	12	3

- (i) Which company's lamps have a greater average life?
 - (ii) Which company's lamps are more consistent performers and why? (18)
3. (a) What is an ogive? How is it constructed?
 - (b) Draw a scatter diagram to show perfect positive correlation, strong negative correlation and a zero correlation.
 - (c) Calculate coefficient of correlation when Covariance of X and Y is 488 and Variance of X is 824 and Variance of Y is 325. (18)
4. (a) Find the trend of the following time series by the method of moving averages using a 3-Yearly moving average and a 4-yearly moving average:

Year	Value	Year	Value
2007	53	2014	88
2008	79	2015	80
2009	76	2016	104
2010	66	2017	98
2011	69	2018	96
2012	94	2019	102
2013	105	2020	106

- (b) Explain seasonal variations. Also, discuss any two methods for computing seasonal variations. (18)
5. The following data give the aptitude test scores and productivity indices of 10 workers selected at random:

Aptitude Scores (X)	60	62	65	70	72	48	53	73	65	82
Productivity Index (Y)	68	60	62	80	85	40	52	62	60	81

 - (i) Calculate the two regression equations and estimate the productivity index of a worker whose test score is 92.
 - (ii) Also compute correlation coefficient. (18)
 6. Given below is the distribution of marks obtained by 140 students in an examination :