National Law University
Statistics for Managers
IV Semester M.B.A., Insurance
Examination 2024

Max. Marks: 100

Time: 3 Hours

Instructions:

- *All non-scientific calculators are allowed.*
- *Log table , Normal distribution table & t distribution table can be used.*
- *Solve any five questions. Each question carries twenty marks*

1a). Find the standard deviation from the following distribution;.

Age under	20-25	25-30	30-35	35-40	40-45	45-50
No. of person	170	110	80	45	40	35

Take assume average = 32.5

b). Calculate Geometric mean of following frequency distribution of marks.

Marks	0-10	10-20	20-30	30-40	40-50
Number of students	5	12	35	45	51

10+10=20 Marks

2 a) A factory claims that only 1% units of the total production are substandard. A sample of 500 units is taken and 2% of them are found to be defective. Check the claim at 95% level of significance.

b) A fertilizer-mixing machine is set to give 12 Kg. of nitrate for every quintal bag of fertilizer. Ten 100 Kg. bags are examined. The percentages of the nitrate are as follows: 11, 14, 13, 12, 13, 12, 13, 14, 11, 12. Is there any reason to believe that the machine is defective? Value for 9 degrees of freedom is 2.262. **10+10=20 Marks**

3 a). The average number of customers who appear at a counter of a certain bank per minute is two. Find the probability that during a given minute:

1. No customer appears.
2. Three or more customers appear. (Given $e^{-2} = 0.1353$)

b). An unbiased coin is tossed 7 times. Find the probability of getting. i). Exactly 2 heads. ii). not more than 2 heads iii). not less than 4 tails iv). At least one tail.

10+10=20 Marks

4a). Below given are the production (in thousand mounds) of a sugar factory. Calculate five yearly

Years	2001	2002	2003	2004	2005	2006	2007
New Business	152	173	188	215	246	280	292

b Calculate Karl Pearson's coefficient of correlation for the data given below

Supply	112	125	126	118	118	121	125	125	131	135
Price	106	103	103	104	98	96	97	97	95	90

10+10=20 Marks

5 a). Define diagrammatic presentation of data with an example? .

b). Estimate the production for the year 2004 with the help of following table.

Year	2001	2002	2003	2004	2005
Production (in tones)	20	22	26	?	35

10+10=20 Marks

6 a). From the chain base index numbers given below prepare fixed base index numbers:

1991	1992	1993	1994	1995
80	110	120	90	140

b). Define regression and Find regression equation of x on y and y on x for the following data.

x	45	48	50	55	65	70	75
y	25	30	35	30	40	50	45

10+10=20 Marks
