CBCS SCHEME

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22MBA14

First Semester MBA Degree Examination, Dec.2023/Jan.2024
Statistics for Managers

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FOUR full questions from Q.No.1 to Q.No.7.
2. Question No. 8 is compulsory.
3. M : Marks , L: Bloom's level , C: Course outcomes.
4. Normal distribution, Poisson distribution table.

			M	L	C
Q.1	a.	Mention the different measures of central tendency.	03	L2	CO1
	b.	A sample of 30 girls married early gives an average life of 55 years with a standard deviation of 10 years. From this, can we conclude at 5% significance level that the early married women live upto 60 years on a average.	07	L5	CO4
	c.	From the data given below find the 2 regression coefficients and 2 regression equations :	10	L3	CO2

X :	11	7	9	5	8	6	10
Y :	10	8	6	5	9	7	11

			M	L	C
Q.2	a.	What is favourable and exhaustive cases?	03	L4	CO3
	b.	The data relating to the market price of the 3 companies are as follows :	07	L3	CO2

Company	A	B	C
Average	150	200	125
Standard deviation	50	40	20

(i) Which company's share is more stable?
(ii) Which one would you like to dispose of any way?

			M	L	C
	c.	Two groups of 50 handicaps each were taken to study the association of blindness with deafness and the observations were tabulated as under :	10	L4	CO5

Attributes	Blinds	Not blind	Total
Deaf	10	40	50
Not deaf	30	20	50
Total	40	60	100

Using X^2 test at 5% level, verify the association of attribute.

			M	L	C
Q.3	a.	Draw a scatter diagram indicating, (i) Position correlation (ii) Negative correlation (iii) No relation	03	L2	CO3
	b.	State the properties of regression co-efficient.	07	L2	CO3
	c.	8 coins are tossed 256 times. The number of heads observed at each throw are given below :	10	L4	CO3

No. of heads at each throw	0	1	2	3	4	5	6	7	8
Frequency	2	6	30	52	67	56	32	10	1

Find the expected frequencies using binomial distribution, mean and SD.

Q.4	a.	What is null and alternate hypothesis?	03	L5	CO4
	b.	In the frequency distribution of 100 families given below, the number of families corresponding to expenditure groups 20 – 40 and 60 – 80 are missing from the table. However, the median is known to be 50. Find the missing frequencies.	07	L3	CO2
	c.	Taking the deviations of the time variable, compute the trend values for the following data by the method of least square. Compute the sales for the year 2023.	10	L3	CO2
Q.5	a.	Mention the components of time series.	03	L3	CO2
	b.	From the pack of playing cards, one card is drawn at random. Find the probability that it is either a spade or a club.	07	L4	CO3
	c.	If a product has 2 defects per unit inspected, using Poisson's distribution calculate the probability of finding a product without any defects, 3 defects and 4 defects.	10	L4	CO3
Q.6	a.	Mention the assumptions of Karl Pearson's co-efficient of correlation.	03	L3	CO2
	b.	What are measures of dispersion? State the properties of an ideal measure of dispersion.	07	L3	CO2
	c.	The monthly income of 1000 employees are normally distributed with a mean of Rs.2500 and SD of Rs.250. Find the number of employees whose monthly income would be, (i) Between Rs.2000 and Rs.3000 (ii) Less than Rs.2000 (iii) More than Rs.3000	10	L5	CO4
Q.7	a.	Distinguish between mean deviation and standard deviation.	03	L3	CO2
	b.	From the following data, find the value of upper quartile, third decile and 90th percentile:	07	L3	CO2
	c.	A box contains 8 red and 5 white balls. Two successive draws of 3 balls are made at random. Find the probability that the first three are white and the second three are red (i) when there is replacement and (ii) when there is no replacement.	10	L4	CO3
Q.8	a.	From the following data, calculate Karl Pearson's co-efficient of correlation :	10	L3	CO2
	b.	From the following data related to the marks assigned by the two judges, calculate the Spearman's co-efficient of rank correlation.	10	L3	CO2

Expenditure :	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
No. of families	14	?	27	?	15

Year	2016	2017	2018	2019	2020	2021	2022
Sales (Rs.)	20	30	40	20	50	60	80

x	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
f	5	15	10	25	20	18	7

X	1	2	3	4	5
Y	6	7	8	9	10

Judge I	26	25	38	37	41	45	60	42	53	57
Judge II	52	25	30	35	48	77	38	43	68	64

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