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2605E761

Candidate's Seat No :_____

MBA-1 Sem.-2 Examination

Q. A.

Time : 2-30 Hours] **May-2025** **[Max. Marks : 70**

Q:1 Explain all the concepts that are associated with sampling and write a short note on probability and non-probability sampling techniques in detail, with relevant figures and examples to support your answer. **(14)**

Q:2 A study by the Atlanta, Georgia, Department of Transportation on the effect of bus-ticket prices on the number of passengers produced the results given in the table below. Find out the correlation for the given data. **(14)**

Ticket Price	25	30	35	40	45	50	55	60
Passenger (per 100 miles)	800	780	780	660	640	600	620	620

OR

Q:2 Explain the following in detail with relevant examples **(14)**

1. Mean
2. Median
3. Mode
4. Standard Deviation
5. Variance
6. Kurtosis
7. Skewness

Q:3 A. Given $\lambda = 4.2$, for a Poisson distribution, $(e^{-4.2} = 0.01500)$ find **(14)**

i. $P(x \leq 2)$

ii. $P(x \geq 5)$

iii. $P(x = 8)$

B. Write a short note on Poisson Distribution.

OR

Q:3 A. For a binomial distribution with n = 7 and p = 0.2, find (14)

i. $P(x = 5)$

ii. $P(x > 2)$

iii. $P(x < 8)$

B. Write a short note on Binomial and Uniform Distribution

(P.T.O)

Q:4 Each day, the United States Customs Service has historically intercepted about $28 million in contraband goods being smuggled into the country, with a standard deviation of $16 million per day. On 64 randomly chosen days in 1992, the U.S. Customs Service intercepted an average of $30.3 million in contraband goods. Does this sample indicate (at a 5 percent level of significance) that the Customs Commissioner should be concerned that smuggling has increased above its historic level? (Z = 1.64) **(14)**

OR

Q:4 A consumer-research organization routinely selects several car models each year and evaluates their fuel efficiency. In this year's study of two similar subcompact models from two different automakers, the average gas mileage for 12 cars of brand A was 27.2 miles per gallon, and the standard deviation was 3.8 mpg. The nine brand B cars that were tested averaged 32.4 mpg, and the standard deviation was 4.3 mpg. At α = 0.01, should it conclude that brand A cars have lower average gas mileage than do brand B cars? (Table Value = 2.539) **(14)**

Q:5 A research company has designed three different systems to clean up oil spills. The following table contains the results, measured by how much surface area (in square meters) is cleared in 1 hour. The data were found by testing each method in several trials. Are the three systems equally effective? Use the 0.05 level of significance (F Value = 3.89) **(14)**

System A	55	60	63	56	59	55
System B	57	53	64	49	62	
System C	66	52	61	57		