SCHOOL OF ADVANCED SCIENCES
DEPARTMENT OF MATHEMATICS
FALL SEMESTER – 2019∼2020
Final Assessment Test
Model Question Paper Pattern and Distribution
(Not for Circulation Among Students)

Course Code : MAT2001   Max. Marks: 100
Course Name : Statistics for Engineers   Duration : 3 Hours

Answer any FIVE of the following questions

(5 × 20 = 100 Marks)

1. (*a*). Question from Module 1 : Introduction to Statistics.
   (Measures of Central Tendency – Mean, Median and Mode).   **[10 M] [CO: 1]**

   (*b*). Question from Module 1 : Introduction to Statistics.
   (Measures of Variability – Quartile Deviation, Mean Deviation, Standard Deviation, Variance and Co-efficient of Variation).   **[10 M] [CO: 1]**

2. (*a*). Question from Module 2 : Random Variables.
   (One-Dimensional Discrete and Continuous Random Variables – Moment Generating Function – Characteristic Function).   **[10 M] [CO: 2]**

   (*b*). Question from Module 2 : Random Variables.
   (Two-Dimensional Discrete and Continuous Random Variables – Marginal and Conditional Distributions – Mathematical Expectation – Covariance).

   [10 M] [CO: 2]

3. (*a*). Question from Module 3 : Correlation and Regression.
   (Correlation – Rank Correlation – Regression).   **[10 M] [CO: 3]**

   (*b*). Question from Module 3 : Correlation and Regression.
   (Partial and Multiple Correlations – Multiple Regression).   **[10 M] [CO: 3]**

4. (*a*). Question from Module 4 : Probability Distributions.
   (Binomial Distribution – Poisson Distribution).   **[10 M] [CO: 2]**

   (*b*). Question from Module 4 : Probability Distributions.
   (Normal Distribution – Gamma Distribution – Exponential Distribution – Weibull Distribution).   **[10 M] [CO: 2]**

5. (*a*). Question from Module 5 : Hypothesis Testing – I.
(Large Sample Tests – Z-Test for Single Proportion and Difference of Proportions). **[10 M] [CO: 4]**

   (*b*). Question from Module 5 : Hypothesis Testing – I.
(Large Sample Tests – Z-Test for Single Mean and Difference of Means). **[10 M] [CO: 4]**

6. (*a*). Question from Module 6 : Hypothesis Testing – II.
(Small Sample Tests – Student's t-Test – F-Test). **[10 M] [CO: 4]**

   (*b*). Question from Module 6 : Hypothesis Testing – II.
(Chi-Square Test – Goodness of Fit and Independence of Attributes – Design of Experiments – Analysis of Variance – One and Two Way Classifications). **[10 M] [CO: 4]**

7. (*a*). Question from Module 7 : Reliability.
(Basic Concepts – Hazard Function – Reliabilities of Series and Parallel Systems – System Reliability – Maintainability – Availability). **[10 M] [CO: 5]**

   (*b*). Question from Module 8 : Industry Expert Lecture.
(Statistical Applications – Refer Minutes of the Course Committee Meeting). **[10 M] [CO: 4]**

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