INSTITUTE OF AERONAUTICAL ENGINEERING
(AUTONOMOUS)

Dundigal - 500 043, Hyderabad

FOUR YEAR B.TECH III SEMESTER SUPPLEMENTARY EXAMINATIONS, JULY- 2019
MAPPING OF SEE QUESTIONS TO COURSE LEARNING OUTCOMES

Course Title	PROBABILITY AND STATISTICS
Course Code	AHS010
Common for	CE / ME
Date of Exam	01 - 07 - 2019
Time	3 Hours
Maximum Marks	70
Chief Examiner	Ms. P Srilatha, Assistant Professor

I. COURSE OBJECTIVES

I	Enrich the knowledge of probability on single random variables and probability distributions.
II	Apply the concept of correlation and regression to find covariance.
III	Analyze the given data for appropriate test of hypothesis.

II. COURSE LEARNING OUTCOMES (CLOs):

CLO Code	CLO	Description
AHS010.01	CLO 1	Understand the basic concepts of probability and random variables.
AHS010.02	CLO 2	Analyze the concepts of discrete and continuous random variables, probability distributions, expectation and variance.
AHS010.03	CLO 3	Use the concept of random variables in real-world problem like graph theory; machine learning, Natural language processing.
AHS010.04	CLO 4	Apply the binomial distribution and poisson distribution to find mean and variance.
AHS010.05	CLO 5	Understand binomial distribution to the phenomena of real-world problem like sick versus healthy.
AHS010.06	CLO 6	Use poission distribution in real-world problem to predict soccer scores.
AHS010.07	CLO 7	Apply the inferential methods relating to the means of normal distributions.

CLO Code	CLO	Description
AHS010.08	CLO 8	Understand the mapping of normal distribution in real-world problem to analyze the stock market.
AHS010.09	CLO 9	Explain multiple random variables and the covariance of two random variables.
AHS010.10	CLO 10	Understand the concept of multiple random variables in real-world problems aspects of wireless communication system.
AHS010.11	CLO 11	Calculate the correlation coefficient to the given data.
AHS010.12	CLO 12	Understand the correlation and regression to the real-world such as stock price and interest rates.
AHS010.13	CLO 13	Calculate the regression to the given data.
AHS010.14	CLO 14	Understand the concept of sampling distribution of statistics and in particular describe the behavior of the sample mean.
AHS010.15	CLO 15	Understand the concept of estimation for classical inference involving confidence interval.
AHS010.16	CLO 16	Understand the concept of estimation in real-world problems of signal processing.
AHS010.17	CLO 17	Understand the foundation for hypothesis testing.
AHS010.18	CLO 18	Understand the concept of hypothesis testing in real-world problem to selecting the best means to stop smoking.
AHS010.19	CLO 19	Apply testing of hypothesis to predict the significance difference in the sample means.
AHS010.20	CLO 20	Apply testing of hypothesis to predict the significance difference in the sample proportions.
AHS010.21	CLO 21	Apply Student t-test to predict the difference in sample means.
AHS010.22	CLO 22	Apply F-test to predict the difference in sample variances.
AHS010.23	CLO 23	Understand the characteristics between the samples using Chi-square test.
AHS010.24	CLO 24	Understand the assumptions involved in the use of ANOVA technique.
AHS010.25	CLO 25	Understand the concept ANOVA to the real-world problems to measure the atmospheric tides.

III. MAPPING OF SEMESTER END EXAMINATION (SEE) TO COURSE LEARNING OUTCOMES (CLOs)

SEE Question No		Marks Allotted	CLO Code	CLO	Course Learning Outcomes	Blooms Taxonomy Level
1	a	7	AHSB12.02	02	Analyze the concepts of discrete and continuous random variables, probability distributions, expectation and variance.	Remember
	b	7	AHSB12.02	02	Analyze the concepts of discrete and continuous random variables, probability distributions, expectation and variance.	Understand
2	a	7	AHSB12.04	04	Apply the binomial distribution and poisson distribution to find mean and variance.	Remember
	b	7	AHSB12.04	04	Apply the binomial distribution and poisson distribution to find mean and variance.	Understand
3	a	7	AHSB12.09	09	Explain multiple random variables and the covariance of two random variables.	Remember

SEE Question No		Marks Allotted	CLO Code	CLO	Course Learning Outcomes	Blooms Taxonomy Level
	b	7	AHSB12.11	11	Calculate the correlation coefficient to the given data.	Understand
4	a	7	AHSB12.11	11	Calculate the correlation coefficient to the given data.	Remember
	b	7	AHSB12.11	11	Calculate the correlation coefficient to the given data.	Understand
5	a	7	AHSB12.14	14	Understand the concept of sampling distribution of statistics and in particular describe the behavior of the sample mean.	Remember
	b	7	AHSB12.14	14	Understand the concept of sampling distribution of statistics and in particular describe the behavior of the sample mean.	Understand
6	a	7	AHSB12.14	14	Understand the concept of sampling distribution of statistics and in particular describe the behavior of the sample mean.	Remember
	b	7	AHSB12.15	15	Understand the concept of estimation for classical inference involving confidence interval.	Understand
7	a	7	AHSB12.20	20	Apply testing of hypothesis to predict the significance difference in the sample proportions.	Remember
	b	7	AHSB12.20	20	Apply testing of hypothesis to predict the significance difference in the sample proportions.	Understand
8	a	7	AHSB12.19	19	Apply testing of hypothesis to predict the significance difference in the sample means.	Remember
	b	7	AHSB12.19	19	Apply testing of hypothesis to predict the significance difference in the sample means.	Understand
9	a	7	AHSB12.23	23	Understand the characteristics between the samples using Chi-square test.	Remember
	b	7	AHSB12.21	21	Apply Student t-test to predict the difference in sample means.	Understand
10	a	7	AHSB12.21	21	Apply Student t-test to predict the difference in sample means.	Remember
	b	7	AHSB12.21	21	Apply Student t-test to predict the difference in sample means.	Understand

COMMENTS OF THE CHIEF EXAMINER:

1. **Length of questions is appropriate for duration of time.**

2. **Question paper is as per the ability of average level of students.**

3. **Allotment of marks to questions is justified.**

Date: 01 - 07 - 2019

Chief Examiner   **Dean, OBE**