Name: Enrolment No:	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Programme Name: B TECH (CSE+BAO) **Semester : 2nd**
Course Name : Applied Statistical Analysis **Time : 03 hrs**
Course Code : CSBA1002 **Max. Marks : 100**
Nos. of page(s) : Two
Instructions : Attempt all questions. All questions are compulsory.

SECTION A

S. No.		Marks	CO
Q 1	What is testing of hypothesis? Discuss briefly.	**4**	**CO4**
Q 2	What do you mean by type I and type II error?	**4**	**CO4**
Q 3	State the meaning of measures of central tendency.	**4**	**CO2**
Q 4	Explain decision tree briefly.	**4**	**CO5**
Q 5	1) The mean of distribution is 14 and the standard deviation is 5. What is the value of the coefficient of variation? a) 60.4% b) 48.3% c) 35.7% d) 27.8% 2) The sum of the deviation about the mean is always: a) Range b) Zero c) Total standard deviation d) positive	**4**	**CO2** **CO2**

SECTION B

Q 6	A pharmaceutical firm maintains that the mean time for a drug to take effect is 24 minutes. In the sample of 400 trials, the mean time is 26 minutes with a standard deviation of 4 minutes. Test the hypothesis that the mean time is 24 minutes against the alternative that it is not equal to 24 minutes. Use a level of significance of 0.05.	**10**	**CO4**
Q 7	Calculate the rank correlation between the marks of 8 candidates in Mathematics and English: Mathematics: 76, 90, 98, 69, 54, 82, 67, 52 English: 25, 37, 56, 12, 7, 36, 23, 11	**10**	**CO3**
Q 8	Differentiate these terms: a) Sample and population b) Discrete and continuous random variable c) Nominal and ordinal level of measurement	**10**	**CO1**
Q 9	Discuss factor analysis and Probit analysis briefly.	**10**	**CO5**

	OR Find out the regression coefficient of Y on X, X on Y and correlation coefficient between X and Y on the basis of the following data: $\sum XY = 350, \acute{X} = 5, \acute{Y} = 6, \sum X = 50, , \sum Y = 60$, variance of x=4, variance of Y=9		**CO3**
	SECTION-C		
Q 10	Discuss the complete method of Analysis of variance.	**20**	**CO4**
Q11	A sample analysis of examination results of 500 students was made. It was found that 220 students had failed, 170 had secured a third class, 90 were placed in second class and 20 got a first class. Are these figures commensurate with general examination result, which is in the ratio 4:3:2:1 for the various categories respectively? OR Calculate mean deviation and its coefficient (from mean) from the following data:	**20**	**CO4** **CO3**

Wages	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No of persons	8	10	15	25	20	18	9	5

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End Semester Examination, May 2019

Programme Name: B TECH (CSE+BAO) **Semester : 6th**

Course Name : Applied Statistical Analysis **Time : 03 hrs**

Course Code : CSBA1002 **Max. Marks : 100**

Nos. of page(s) : Two

Instructions : Attempt all 11 questions. All questions are compulsory.

SECTION A

S. No.		Marks	CO
Q 1	Explain the following terms: a) Null and Alternative Hypothesis b) Critical region	**4**	**CO4**
Q 2	Explain Decision tree and its application.	**4**	**CO5**
Q 3	Differentiate between Mean, Median and Mode.	**4**	**CO2**
Q 4	How do you test the significance of the difference between the means of two sample?	**4**	**CO4**
Q 5	Discuss the level of measurement briefly.	**4**	**CO1**

SECTION B

Q 6	Calculate the standard deviation and its coefficient for the following data: Class | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 Frequency | 18 | 44 | 102 | 160 | 57 | 19	**10**	**CO2**
Q 7	Discuss testing of Hypothesis with two types of errors.	**10**	**CO4**
Q 8	Calculate the coefficient of correlation from the following data through Karl Pearson's method: X: 12, 9, 8, 10, 11, 13, 7 Y: 14, 8, 6, 9, 11, 12, 3	**10**	**CO3**
Q 9	Discuss Probit analysis and its application. OR What is test of significance? Discuss different test of significance for the cases when the size of sample is large.	**10**	**CO5** **CO4**

SECTION-C

Q 10	A dice was thrown 300 times and the following frequency distribution was obtained: Face no: 1, 2, 3, 4, 5, 6	**20**	**CO4**

	Frequency: 35, 40, 32, 60, 68, 65 Test that the dice is unbiased.		
Q 11	Below are given the gain in weights of cow fed on two diets x and Y: Diet X: 25, 32, 30, 32, 24, 14, 32 Diet Y: 24, 34, 22, 30, 42, 31, 40, 30, 32, 35 Test at 5% level, whether the two diets differ as regards their effect on mean increase in weight. OR The following table gives the yields on 12 sample plot under three varieties of seeds A, B and C : A: 10, 6, 7, 9 B: 9, 7, 7, 5 C: 4, 8, 6, 6 Set up a table of analysis of variance and find out whether there is a significant difference between the mean yields of three varieties.	**20**	**CO4** **CO5**