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	FINALTERM EXAMINATION FALL 2006 STA301 - STATISTICS AND PROBABILITY (Session - 1)	Marks: 50 Time: 120min

StudentID/LoginID: _____

Student Name: _____

Center Name/Code: _____

Exam Date: Tuesday, February 06, 2007

Please read the following instructions carefully before attempting any of the questions:

1. Attempt all questions. Marks are written adjacent to each question.

2. Do not ask any question about the contents of this examination from anyone.

a. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.

b. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.

c. Write all steps, missing steps may lead to deduction of marks.

3. You are allowed to use the calculator & Statistical tables in order to solve the questions.

4. For your convenience we are providing you the following symbols,

□ **,**∩**,** $\bar{X}$ **o**r write Mean, **s,** ∫ or **sd** for standard deviation, **s**₂ ∫₂ or **sd**₂ or variance for variance, √□ ,□ log x ,for square root or whole square root.

****WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.**

For Teacher's use only											
Question	1	2	3	4	5	6	7	8	9	10	Total
Marks											
Question	11	12	13	14							
Marks											

Question No: 1 (Marks: 4)

Statistics as a subject, in which two of parts is divided? Expalin briefly both of parts.

Question No: 2 (Marks: 4)

Differentiate simple and composite hypothesis.

Question No: 3 (Marks: 4)

Correct the followings:

$\propto \pm \int$ contains approximately 50% area.

$\propto \pm 2 \int$ contains approximately 90% area.

$\propto \pm 3 \int$ contains approximately 90.88% area.

Question No: 4 (Marks: 1) - Please choose one

The heights in centimeters of 5 students are:
165, 175, 176, 159, 170.
The sample median and sample mean are respectively:

- 170, 169
- 170, 170
- 169, 170
- 176, 169

Question No: 5 (Marks: 1) - Please choose one

The characteristic which can not be measured numerically is called:

▶ Quantitative variable

▶ Qualitative variable

▶ Discrete variable

▶ Continuous variable

Question No: 6 (Marks: 1) - Please choose one

The expected value of the normal distribution is

▶ 0

▶ 1

▶ ∞

▶ $\int$

Question No: 7 (Marks: 1) - Please choose one

Normal distribution is

▶ Uni-model

▶ Bi-modal

▶ Multi-model

▶ None of these

Question No: 8 (Marks: 1) - Please choose one

One sided and two sided critical regions are based on:

- Level of significance
- Sample size
- Null hypothesis
- Alternative hypothesis

Question No: 9 (Marks: 1) - Please choose one

The rule or formula that is used to estimate a population parameter is called:

- Estimate
- Estimator
- Denominator
- None of these

Question No: 10 (Marks: 1) - Please choose one

The probability of rejecting a true null hypothesis is called:

- Level of significance
- Type-1 error

► Type-II error

► None of above

Question No: 11 (Marks: 1) - Please choose one

The value of chi-square can never be

► Zero

► Negative

► Greater than 1

► None of these

Question No: 12 (Marks: 10)

The grade-point averages of college seniors selected at random from the graduating class are as foll o

3.2	1.9	2.7	2.4
2.8	2.9	3.8	3.0
2.5	3.3	1.8	2.5
3.7	2.8	2.0	3.2
2.3	2.1	2.5	1.0

Calculate the standard deviation.

Question No: 13 (Marks: 10)

The mean lifetime of electric light bulbs produced by a company has in the past been 1120 hours with a standard deviation of 125 hours. A sample of 8 electric bulbs recently chosen form a supply of newly manufactured bulbs showed a mean lifetime of 1070 hours. Test the hypothesis that mean lifetime of the bulbs has not changed using a level of significance of 0.05.

Question No: 14 (Marks: 10)

A random sample of 200 voters is selected and 120 are found to support an annexation suit. Find the 96% confidence interval for the fraction of the voting population favoring the suit.

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