السلام علیکم اللہ ورحمتہ وبرکاتہ

اللہ" وَتُعِزُّ مَن تَشَاءُ وَتُذِلُّ مَن تَشَاءُ

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# Sta-301 Important Mcq's For Final Term:
# Solve By Vu_Toper-RM

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Q.The t-distribution can never become narrower than:
Select correct option:
F-distribution
**standard normal distribution**
Chi-square distribution
exponential distribution

Q.When sampling is from an infinite population, the mean and standard error of the sampling distribution of p^ are ..and.., respectively:
Select correct option:

**p, sqrt [p(1 - p)/n]**
p^, p(1 - p) / n
p, n(1 - p)p
p, p(1 - p)

Q.3 The standard error of the sampling distribution of the sample mean when sampling is done with replacement is equal to:
Select correct option:
sigma
s / n
**sigma /sqrt( n)**
s / (n - 1)

Q.4 In a Poisson distribution, Maximum Likelihood Estimator (MLE) for meu (u) is equal to:
Select correct option:
**Sample mean**
Reciprocal of the mean
Sample variance
Reciprocal of the sample variance

Q.5 The **precision** of an estimator can be increased by increasing the;
Select correct option:
Number of parameters
Number of estimators
Size of population
**Size of sample**

Q.6 t-distribution can be used to find the confidence interval for:
Select correct option:
**Population variance**
Population means
Difference between population proportions
Populating proportion

Q.7 By increasing sample size, _____ can be decreased:
Select correct option:
Alpha
**Beta**
Both Alpha and Beta
None of these

Q.8 Sample Proportion is a /an_____ estimator of population mean.
Select correct option:
**Unbiased**
Consistent
Unbiased and Consistent estimator
None of these

Q.9 Accept H0/H0 is false, is the _____.
Select correct option:
Correct decision
**Type II error**
Type I error
None of the above

Q.10 The critical region is computed from the value of:

Select correct option:
Alpha
Beta
**1-alpha**
1-Beta

Q.11 The probability of making a type II error (failing to reject the null hypothesis when it is actually false) is called
**β (beta)**

Q.12 Match the binomial probability P(x< 23) with the correct statement.
Select correct option:
P(there are at most 23 successes)
P (there are fewer than 23 successes)
P (there are more than 23 successes)
P (there are at least 23 successes)

Q.13 If the second moment ratio is greater than 3 the distribution will be:
Select correct option:
Mesokurtic
Leptokurtic
Platykurtic
None of these

Q.14 Position of the normal curve changes along the horizontal axis due to:
Select correct option:
Mean

Median
Mode
Standard deviation

Q.15 F-distribution is a_____distribution for v1>2 and v2>2.
Select correct option:
Unimodel
Bimodal
Discrete
Negatively skewed

Q.16 If there are 5 treatments in a CRD experiment then the degrees of freedom for treatment will be
Select correct option:
5-2=3
5-1=4
5-0=5
5-4=1

Q.17 As sample size goes up, what tends to happen to 95% confidence intervals?
Select correct option:
They become wider
They become more precise
They become more narrow
They become more precise and narrow

Q.18 Under which of the following circumstances is it impossible to construct a confidence interval for the population mean?

Select correct option:

A normal population with a large sample and a known population variance

A non-normal population with a large sample and an unknown population variance

A normal population with a large sample and a known population variance

A non-normal population with a small sample and an unknown population variance

Q.19 The hypergeometric probability distribution has parameters:

Select correct option:

N, n

N, P, n

N, n, k

N, N-K, n

Q.20 If b(x, 7, 0.30), the variance of this distribution is:

Select correct option:

1.77

1.74

1.44

1.47

Q.21 The value of chi square can never be :

Select correct option:

Zero

Less than 1

Greater than 1
Negative

In the method of moments, how many equations are required for finding two unknown population parameters?
Select correct option:
1
**2**
3
4
Question # 2 of 10 (Start time: 06:45:31 PM) Total Marks: 1
For statistical inference about the mean of a single population when the population standard deviation is unknown, the degrees for freedom for the t distribution equal n-1 because we lose one degree of freedom by using the:
Select correct option:
**Sample mean as an estimate of the population mean**
Sample size as an estimate of the population size
Sample proportion as an estimate of the population proportion
Sample standard deviation as an estimate of the population standard deviation
Question # 3 of 10 ( Start time: 06:47:31 PM ) Total Marks: 1
An urn contains 4 red balls and 6 green balls. A sample of 4 balls is selected from the urn without replacement. It is the example of:
Select correct option:
Binomial distribution
**Hypergeometric distribution**

Poisson distribution
Exponential distribution
Question # 4 of 10 ( Start time: 06:48:17 PM ) Total Marks: 1
An estimator is always a:
Select correct option:
**Statistic**
Random variable
Statistic and Random variable
Parameter
Question # 5 of 10 ( Start time: 06:49:50 PM ) Total Marks: 1
The Chi- Square distribution is continuous distribution ranging from:
Select correct option:
**Zero to infinity**
Minus infinity to plus infinity
Minus infinity to one
One to plus infinity
Question # 6 of 10 ( Start time: 06:51:10 PM ) Total Marks: 1
In a Geometric distribution, Maximum Likelihood Estimator (MLE) for proportion (P) is equal to:
Select correct option:
Sample mean
**Reciprocal of the mean**
Sample variance
Reciprocal of the sample variance
Question # 7 of 10 ( Start time: 06:52:45 PM ) Total Marks: 1

Let X be a random variable with binomial distribution, that is (x=0,1,…, n). The Var[X] is:
Select correct option:
P
NP
**NP (1-p)**
Xnp
Question # 8 of 10 ( Start time: 06:54:23 PM ) Total Marks: 1
ANOVA stands for
Select correct option:
**Analysis of variance**
Analysis of covariance
Analysis of variables
All above
Question # 9 of 10 ( Start time: 06:55:37 PM ) Total Marks: 1
If an estimator is more efficient then the other estimator, its shape of the sampling distribution will be
Select correct option:
Flattered
Normal
**Highly peaked**
Skewed to right
Question # 10 of 10 ( Start time: 06:56:34 PM ) Total Marks: 1
How can we interpret the 90% confidence interval for the mean of the normal population?
Select correct option:
There are 10% chances of falling true value of the parameter

**There are 90% chances of falling true value of the parameter**
There are 100% chances of falling true value of the parameter
All are correct
Question # 1 of 10 ( Start time: 07:03:59 PM ) Total Marks: 1
If a random variable X denotes the number of heads when we toss a fair coin 5 times, the X assumed the values:
Select correct option:
0,1,2,3
1, 2,3,4,5
**0, 1, 2,3,4,5**
1, 5, 5
Question # 2 of 10 ( Start time: 07:04:50 PM ) Total Marks: 1
Which of the following is most important and most widely used method in point estimation?
Select correct option:
The method of moments
The method of fractional moments
The method of least square
**The method of maximum likelihood**
**The method of maximum likelihood is regarded as the MOST important method of estimation, and is the most widely used method. This method was introduced in 1922 by Sir Ronald A. Fisher (1890-1962).The mathematical technique of finding Maximum Likelihood Estimators is a bit advanced, and involves the concept of the Likelihood Function.**
Question # 3 of 10 ( Start time: 07:05:41 PM ) Total Marks: 1
F-distribution is skewed to the

Select correct option:
**Right**
Left
Right and Left
None of these
Question # 4 of 10 ( Start time: 07:06:49 PM ) Total Marks: 1
As sample size goes up, what tends to happen to 95% confidence intervals?
Select correct option:
They become wider
They become more precise
**They become more narrow**
They become more precise and narrow
Question # 5 of 10 ( Start time: 07:08:10 PM ) Total Marks: 1
In a Geometric distribution, Maximum Likelihood Estimator (MLE) for proportion (P) is equal to:
Select correct option:
Sample mean
**Reciprocal of the mean**
Sample variance
Reciprocal of the sample variance
Question # 6 of 10 ( Start time: 07:09:29 PM ) Total Marks: 1
In general, the estimators obtained by the method of moments are …….
Select correct option:
Biased
Inconsistent

**Inefficient**
All the above
Question # 7 of 10 ( Start time: 07:10:49 PM ) Total Marks: 1
When we draw the sample with replacement, the probability distribution to be used is:
Select correct option:
**Binomial**
Hypergeometric
Binomial & hypergeometric
Poisson
Question # 8 of 10 ( Start time: 07:11:28 PM ) Total Marks: 1
ANOVA stands for
Select correct option:
**Analysis of variance**
Analysis of covariance
Analysis of variables
All above
Question # 9 of 10 ( Start time: 07:12:00 PM ) Total Marks: 1
Suppose 60% of a herd of cattle is infected with a particular disease. Let Y = the number of non-diseased cattle in a sample of size 5. The distribution of Y is:
Select correct option:
Binomial with n = 5 and p = 0.6
**Binomial with n = 5 and p = 0.4**
Binomial with n = 5 and p = 0.5
Poisson with u = .6
Question # 10 of 10 (Start time: 07:13:04 PM) Total Marks:

1
The value of chi square can never be:
Select correct option:
Zero
Less than 1
Greater than 1
**Negative**

Question # 1 of 10 ( Start time: 07:28:04 PM ) Total Marks: 1
We use the Poisson approximation to the binomial when:
Select correct option:
p is 0.01 or less & n is 10
**p is 0.05 or less & n is 50**
p is 0.04 or less & n is 15
p is 0.02 or less & n is 10
Question # 2 of 10 ( Start time: 07:29:12 PM ) Total Marks: 1
In a Geometric distribution, Maximum Likelihood Estimator (MLE) for proportion (P) is equal to:
Select correct option:
Sample mean
**Reciprocal of the mean**
Sample variance
Reciprocal of the sample variance
Question # 3 of 10 ( Start time: 07:29:39 PM ) Total Marks: 1
If b(x; 15, 0.75), the mean of this distribution is:
Select correct option:
11.50

11.15
11.20
**11.25**
Question # 4 of 10 ( Start time: 07:31:02 PM ) Total Marks: 1
Under which of the following circumstances is it impossible to construct a confidence interval for the population mean?
Select correct option:
A normal population with a large sample and a known population variance
A non-normal population with a large sample and an unknown population variance
**A normal population with a large sample and a known population variance**
A non-normal population with a small sample and an unknown population variance
Question # 5 of 10 ( Start time: 07:32:27 PM ) Total Marks: 1
In completely randomized design (CRD) treatments are assigned to experimental units completely at random, i.e. randomization is done without any?
Select correct option:
Objection
**Restriction**
Obligation
All above mentioned
Question # 6 of 10 ( Start time: 07:33:42 PM ) Total Marks: 1
If the random variable “X” follows F-distribution with v1 and v2 degrees of freedom, then reciprocal of “X” i.e. “1/X” also follows

F-distribution with respective degrees of freedom
Select correct option:
v1
v2
**V1 and v2**
V2 and v1
Question # 7 of 10 ( Start time: 07:35:02 PM ) Total Marks: 1
The precision of an estimator can be increased by decreasing the;
Select correct option:
**Level of significance**
Number of parameters
Number of estimators
Size of sample
Question # 8 of 10 ( Start time: 07:36:28 PM ) Total Marks: 1
T-distribtion is applicable in case of
Select correct option:
Independent samples
Dependent samples
Both independent and dependent samples
**Non-Normal populations**
Question # 9 of 10 ( Start time: 07:37:49 PM ) Total Marks: 1
A consistent estimator will always be a:
Select correct option:
Unbiased estimator
Biased estimator
**Unbiased estimator and biased estimator**
May or may not be unbiased estimator

Question # 10 of 10 ( Start time: 07:39:15 PM ) Total Marks: 1

Which of the following is desirable for a good point estimator?

Select correct option:

Consistency

Unbiasedness

Efficiency

**All of these**

Question # 1 of 10 ( Start time: 07:45:27 PM ) Total Marks: 1

Suppose 60% of a herd of cattle is infected with a particular disease. Let Y = the number of non-diseased cattle in a sample of size 5. the distribution of Y is:

Select correct option:

Binomial with n = 5 and p = 0.6

**Binomial with n = 5 and p = 0.4**

Binomial with n = 5 and p = 0.5

Poisson with u = .6

Question # 2 of 10 ( Start time: 07:45:46 PM ) Total Marks: 1

If b(x; 15, 0.75), the mean of this distribution is:

Select correct option:

11.50

11.15

11.20

**11.25**

Question # 3 of 10 ( Start time: 07:46:40 PM ) Total Marks: 1

A statistic whose standard deviation decreases with an increase in sample size will be called:

Select correct option:
Unbiased
**Consistent**
Efficient
Sufficient
Question # 4 of 10 ( Start time: 07:48:04 PM ) Total Marks: 1
F- Distribution has……parameter(s).
Select correct option:
One
**Two**
Three
No
Question # 5 of 10 ( Start time: 07:49:33 PM ) Total Marks: 1
In an ANOVA test there are 8 observations in each of 3 treatments. The degree of freedom for error in CR design is:
Select correct option:
21
**24**
14
16
Question # 6 of 10 ( Start time: 07:50:44 PM ) Total Marks: 1
What is the mean and variance of binomial distribution b(x; n, p)?
Select correct option:
Xp and npq
NP and PQ
**NP and npq**
Zero and one

Question # 7 of 10 ( Start time: 07:52:08 PM ) Total Marks: 1

"A point estimate plus/minus a few times the standard error of that estimate". This statement represents:

Select correct option:

**Confidence interval**

Critical region

Acceptance region

Critical value

Question # 8 of 10 ( Start time: 07:53:20 PM ) Total Marks: 1

Mean of F-distribution with V2>2 is

Select correct option:

V1/(V2-2)

**V2/(V2-2)**

V2/(V1-2)

V1/(V1-2)

Question # 9 of 10 (Start time: 07:54:50 PM)

Which of the following is most important and most widely used method in point estimation?

Select correct option:

The method of moments

The method of fractional moments

The method of least square

The method of maximum likelihood

Question # 10 of 10 (Start time: 07:56:21 PM)

The hypergeometric random variable is a (an):

Select correct option:

Continuous variable

Discrete variable

Undefined
**Independent**
Which of the following statements is false?
The *t* distribution is symmetric about zero
The *t* distribution is more spread out than the standard normal distribution
**As the degrees of freedom get smaller, the *t*-distribution's dispersion gets smaller**
The *t* distribution is mound-shaped

For statistical inference about the mean of a single population when the population standard deviation is unknown, the degrees for freedom for the *t* distribution equal *n*-1 because we lose one degree of freedom by using the:
**Sample mean as an estimate of the population mean**
Sample standard deviation as an estimate of the population standard deviation
Sample proportion as an estimate of the population proportion
Sample size as an estimate of the population size

In testing the hypotheses Null hypothesis: mu = 200
Alternative hypothesis: mu less than 200 the sample mean are found to be 120. The null hypothesis:
Should be rejected
Should not be rejected
Should be rejected only if $n > 30$
**None of the above answers is correct**

For a sample of size 20 taken from a normally distributed population with standard deviation equal to 5, a 90% confidence

interval for the population mean would require the use of:
$t = 1.328$
$t = 1.729$
$t = 2.12$
**$z = 1.645$**

Under which of the following circumstances is it impossible to construct a confidence interval for the population mean?
A non-normal population with a large sample and an unknown population variance
A normal population with a large sample and a known population variance
**Non-normal population with a small sample and an unknown population variance**
A normal population with a small sample and an unknown population variance

Suppose that a one-tail t test is being applied to find out if the population mean is less than 100. The level of significance is .05 and 25 observations were sampled. The rejection region is:
$t > 1.708$
**$t < -1.711$**
$t > 1.318$
$t < -1.316$

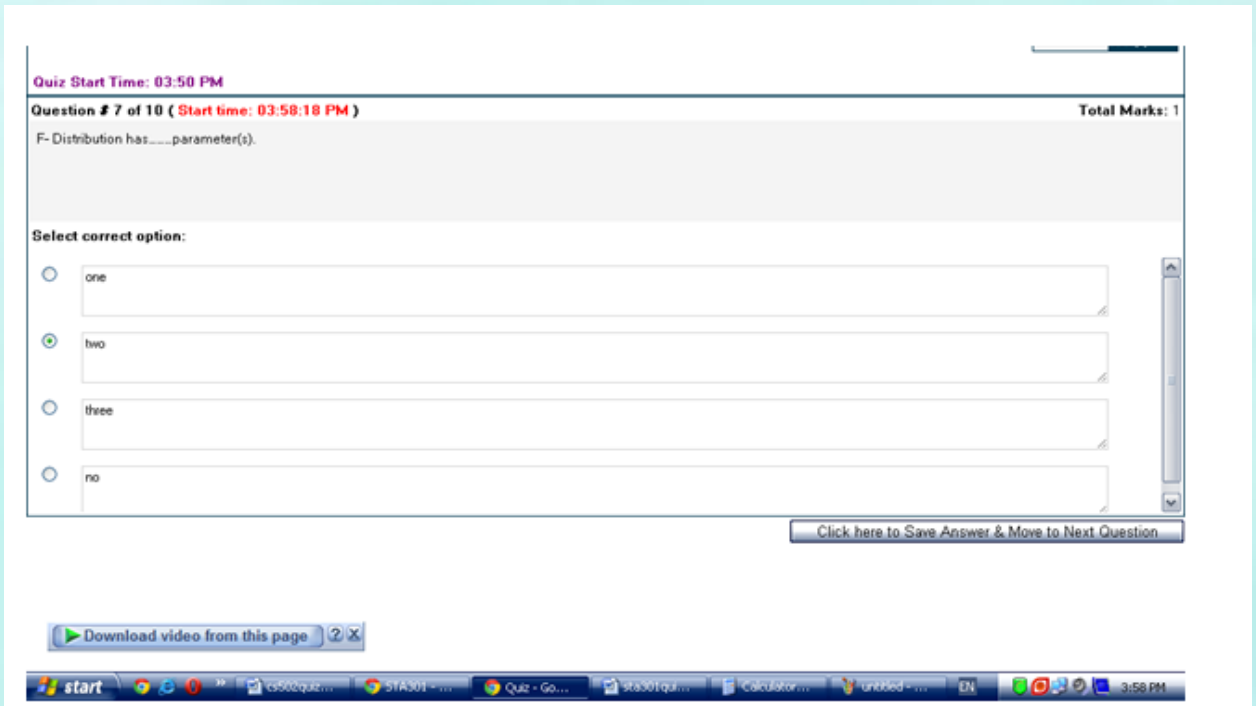
Which of the following is true about the *t* distribution?
Approaches the normal distribution as its degrees of freedom increase
Assumes the population is normally distributed
It is more spread out than the standard normal distribution

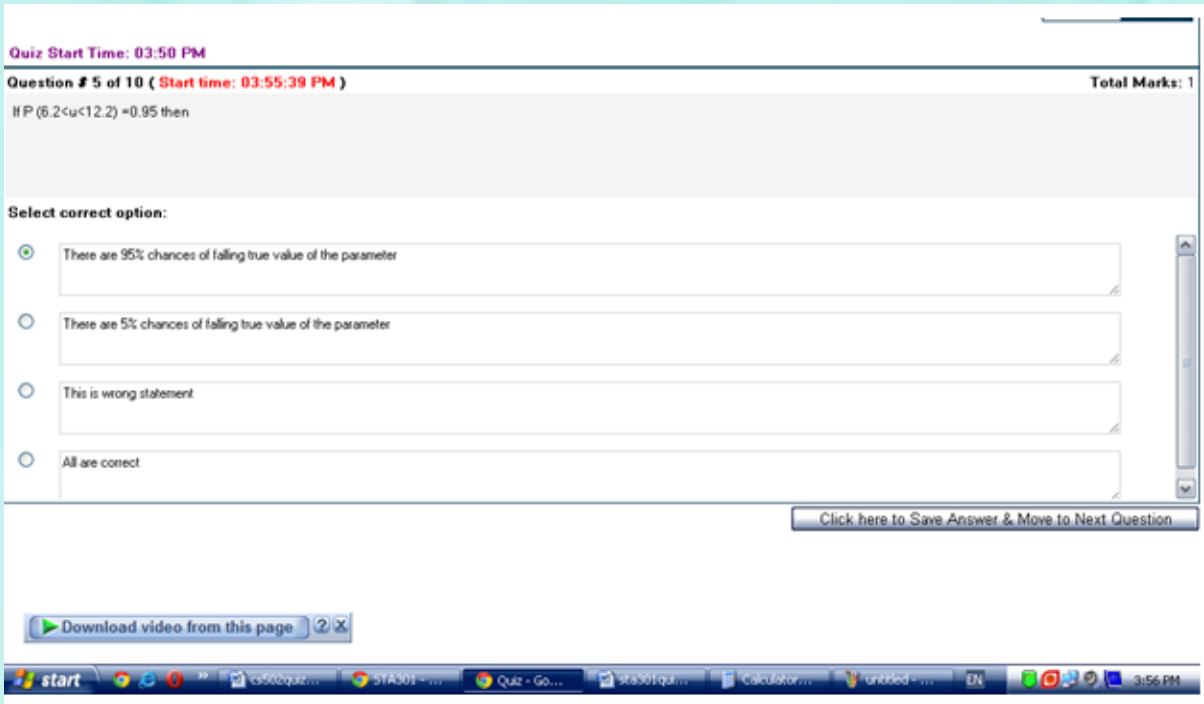
**All of the above statements are true**

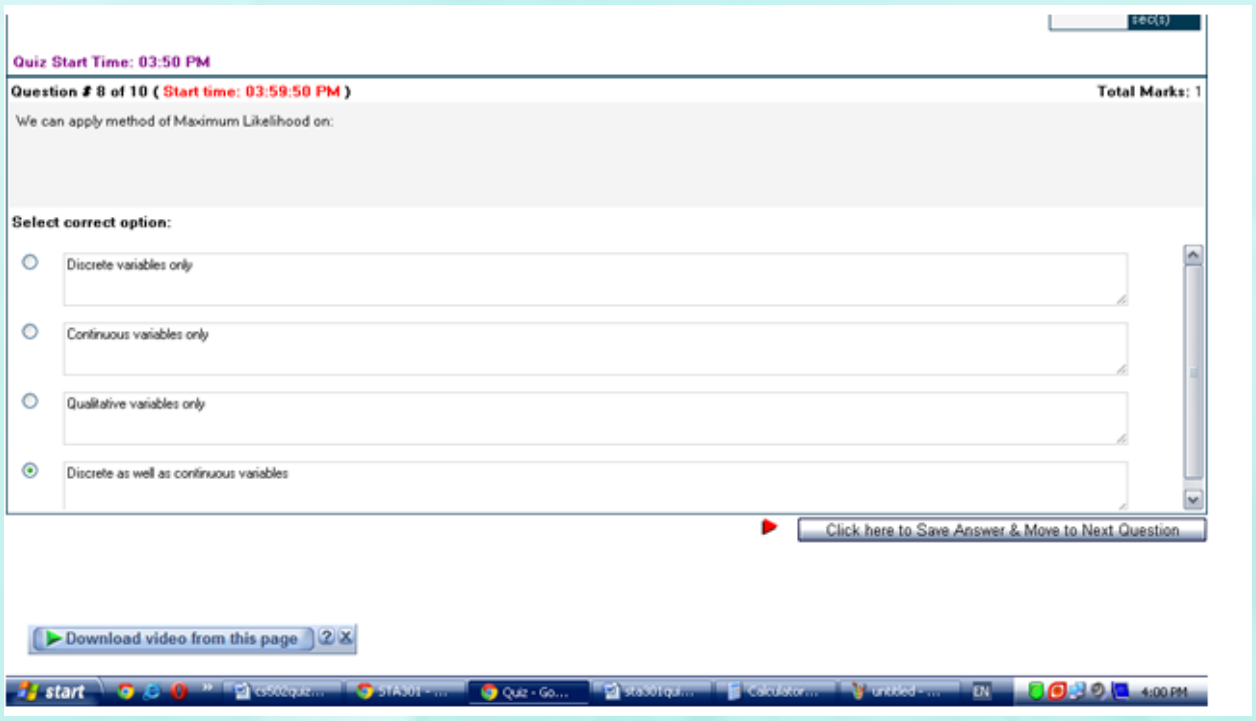
A random sample of size 20 taken from a normally distributed population resulted in a sample variance of 32. The lower limit of a 90% confidence interval for the population variance would be:
52.185
20.375
**20.170**
54.931

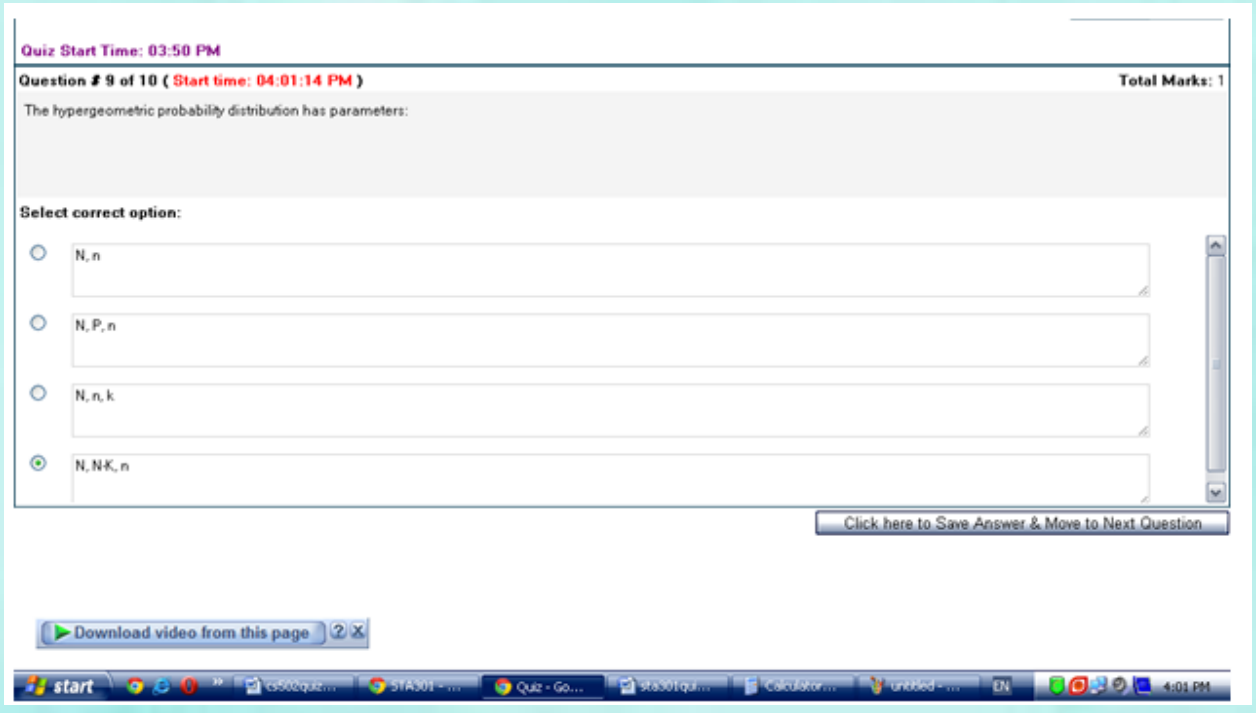
A random sample of size 15 taken from a normally distributed population revealed a sample mean of 75 and a sample variance of 25. The upper limit of a 95% confidence interval for the population mean would equal:
**77.769**
72.231
72.727
77.273

Based on sample data, the 90% confidence interval limits for the population mean are LCL = 170.86 UCL = 195.42. If the 10% level of significance were used in testing the hypotheses
Null: mu = 201
Alt: mu not equal to 201, the null hypothesis:
**Would be rejected**
Would not be rejected
Would have to be revised
None of the above

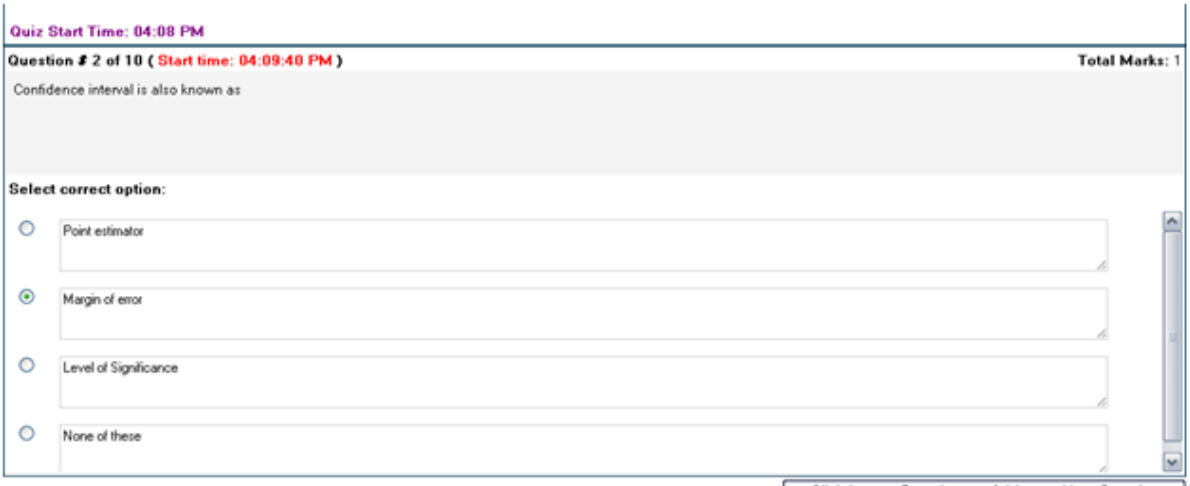

Quiz Start Time: 03:50 PM
Question # 7 of 10 ( Start time: 03:58:18 PM )
Total Marks: 1
F- Distribution has.....parameter(s).
Select correct option:
one
two
three
no
Click here to Save Answer & Move to Next Question
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3:58 PM


Quiz Start Time: 03:50 PM
Question # 5 of 10 ( Start time: 03:55:39 PM )
Total Marks: 1
If P (6.2<u<12.2) =0.95 then
Select correct option:
There are 95% chances of falling true value of the parameter
There are 5% chances of falling true value of the parameter
This is wrong statement
All are correct
Click here to Save Answer & Move to Next Question
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3:56 PM


Quiz Start Time: 03:50 PM
Question # 8 of 10 ( Start time: 03:59:50 PM )
Total Marks: 1
We can apply method of Maximum Likelihood on:
Select correct option:
Discrete variables only
Continuous variables only
Qualitative variables only
Discrete as well as continuous variables
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Quiz Start Time: 03:50 PM
Question # 9 of 10 ( Start time: 04:01:14 PM )
Total Marks: 1
The hypergeometric probability distribution has parameters:
Select correct option:
N, n
N, P, n
N, n, k
N, N-K, n
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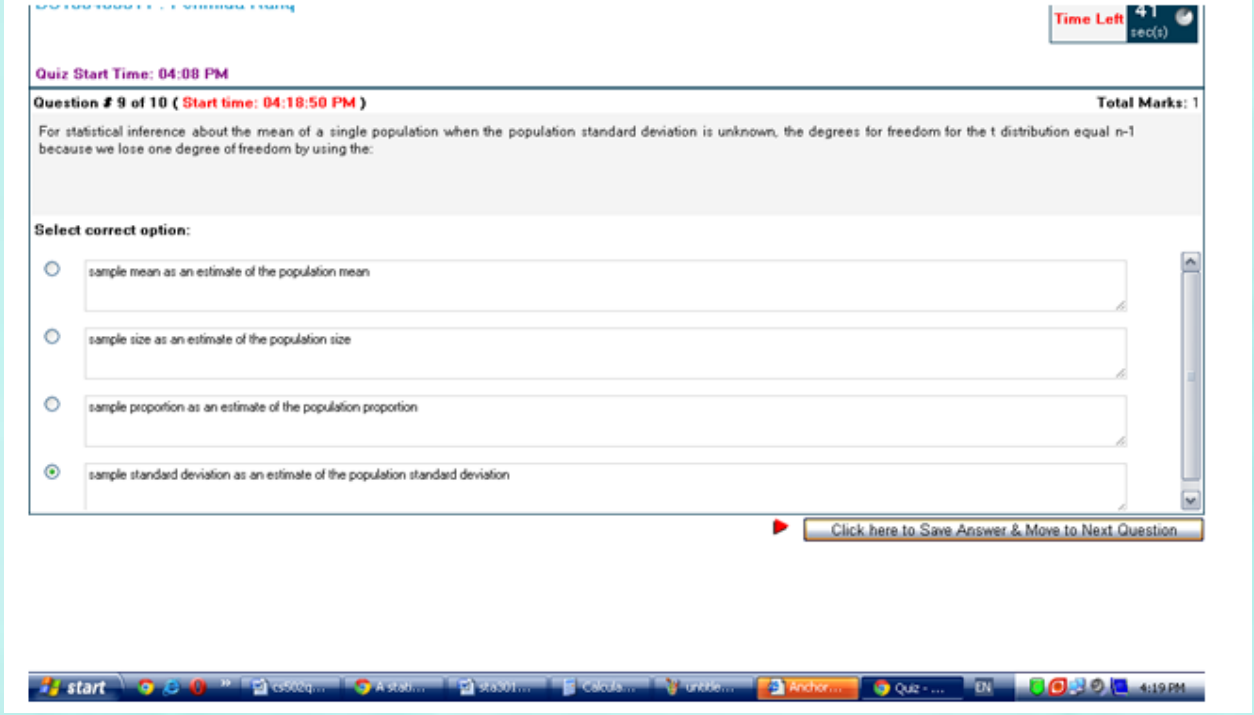

Quiz - Google Chrome
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Time Left 15 sec(s)
Quiz Start Time: 04:08 PM
Question # 1 of 10 ( Start time: 04:08:13 PM )
Total Marks: 1
A statistic whose standard deviation decreases with an increase in sample size will be called:
Select correct option:
Unbiased
Consistent
Efficient
Sufficient
Click here to Save Answer & Move to Next Question
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4:09 PM

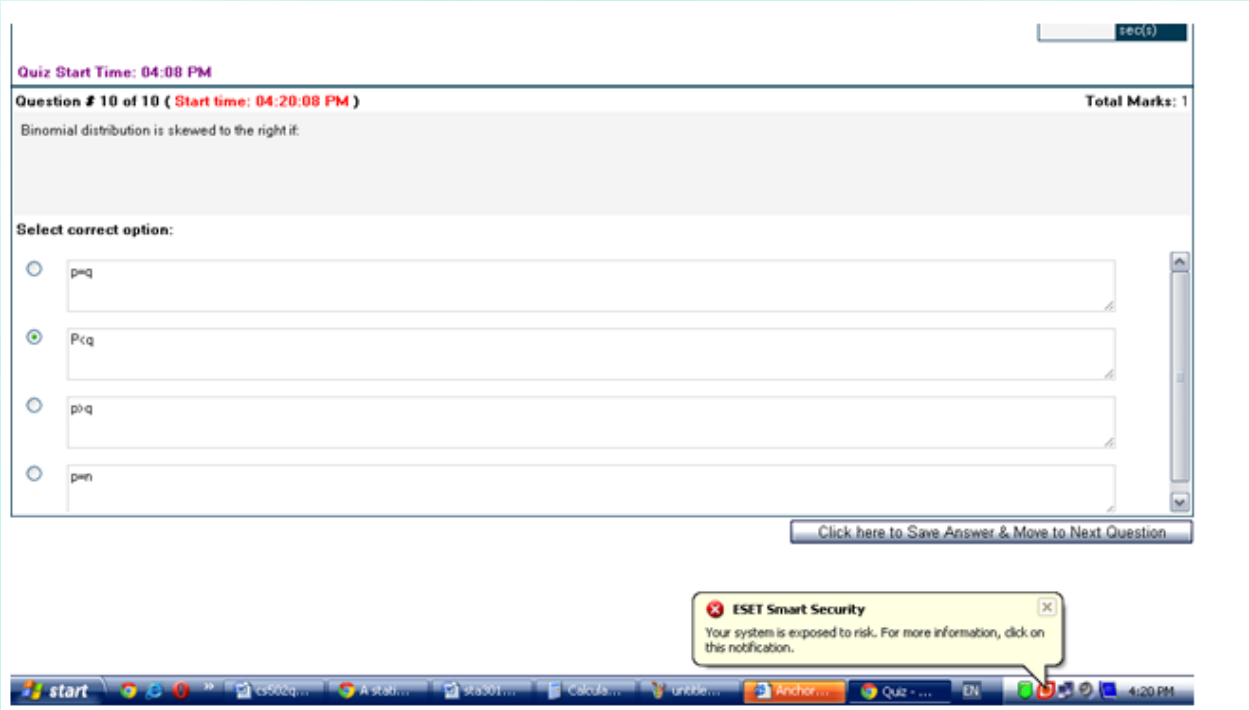

Quiz Start Time: 04:08 PM
Question # 2 of 10 ( Start time: 04:09:40 PM )
Total Marks: 1
Confidence interval is also known as
Select correct option:
Point estimator
Margin of error
Level of Significance
None of these
Click here to Save Answer & Move to Next Question
start
4:10 PM


Time Left
sec(s)
Quiz Start Time: 04:08 PM
Question # 3 of 10 ( Start time: 04:11:13 PM )
Total Marks: 1
If a statistic used as an estimator, has its expected value equal to the true value of the population parameter being estimated then it is called .....
Select correct option:
Consistent
Unbiased
Efficient
Sufficient
Click here to Save Answer & Move to Next Question
start
4:11 PM


Time Left
sec(s)
Quiz Start Time: 04:08 PM
Question # 4 of 10 ( Start time: 04:12:34 PM )
Total Marks: 1
If there are 5 treatments in a CRD experiment then the degrees of freedom for treatment will be
Select correct option:
5-2=3
5-1=4
5-0=5
5-4=1
Click here to Save Answer & Move to Next Question
start
4:12 PM


Time Left
sec(s)
Quiz Start Time: 04:08 PM
Question # 5 of 10 ( Start time: 04:13:15 PM )
Total Marks: 1
Which type of data is used in the binomial distribution?
Select correct option:
Discrete data only
Continues data only
Qualitative data only
Both discrete and continuous
Click here to Save Answer & Move to Next Question
start
4:13 PM


Time Left
41
sec(s)
Quiz Start Time: 04:08 PM
Question # 9 of 10 ( Start time: 04:18:50 PM )
Total Marks: 1
For statistical inference about the mean of a single population when the population standard deviation is unknown, the degrees for freedom for the t distribution equal n-1 because we lose one degree of freedom by using the:
Select correct option:
sample mean as an estimate of the population mean
sample size as an estimate of the population size
sample proportion as an estimate of the population proportion
sample standard deviation as an estimate of the population standard deviation
Click here to Save Answer & Move to Next Question
start
4:19 PM




1)

2)

**Provide By Vu_Toper RM**