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BY MATHEMATICS

Question No : 1 of 50

Marks: 1 (Time 1 Min)

When sample mean is calculated from the sample then we can find a sample size "n" by using the given below formula:

Answer

☐  $\left( \frac{z_c \sigma}{E} \right)$

☒  $\left( \frac{z_c \sigma^2}{E} \right)$

☐  $\left( \frac{z_c \sigma}{E} \right)^2$

Question No : 2 of 50

Marks: 1 (Time 1 Min)

In a t-distribution, mean for  $v > 1$  will be equal to :

Answer

☐ 0

☒ 1

☐ 2

☐ 3

Question No : 3 of 50

Marks: 1 (Time 1 Min)

In a two-tailed hypothesis testing about a population mean with a sample size of 100 and  $\alpha = 0.05$  (critical value : 1.96), the rejection region would be:

Answer

☐  $z > 1.64$

☐  $z > 1.96$

☒  $z < -1.96$  and  $z > 1.96$

☐  $z < -1.64$  and  $z > 1.64$

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Question No : 4 of 50

Marks: 1 (Time 1 Min)

If a significance level of 1% is used rather than 5%, the null hypothesis is:

Answer

☐ More likely to be rejected

☒ Less likely to be rejected

☐ Just as likely to be rejected

☐ None of the above

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Question No : 5 of 50

Marks: 1 (Time 1 Min)

A statement that is accepted if the sample data provide sufficient evidence that the null hypothesis is false is called:

Answer

- ☐ Simple Hypothesis
- ☒ Composite Hypothesis
- ☐ Statistical Hypothesis
- ☐ Alternative Hypothesis

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Question No : 6 of 50

Marks: 1 (Time 1 Min)

Under what condition would you use the paired t-test?

Answer

- ☐ When there is a single sample of data.
- ☒ When the two samples of data are independent.
- ☐ When there are two proportions.
- ☐ When the two samples of data are not independent.

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Question No : 7 of 50

Marks: 1 (Time 1 Min)

If the number of attributes is three represented by A, B and C, then  
Number of class frequencies =?

Answer

☐  $3^2 = 9$

☒  $3^3 = 27$

☐  $2^3 = 8$

☐  $2^2 = 4$

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Question No : 8 of 50

Marks: 1 (Time 1 Min)

The chi-square test is applied to:

Answer

☐ Interval scale

☒ Categorical Data

☐ Ordinal scale

☐ Ratio Scale

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Question No : 9 of 50

Marks: 1 (Time 1 Min)

The value of  $\chi^2$  can never be :

Answer

- ☐ Zero
- ☐ less than 1
- ☐ greater than 1
- ☒ Negative

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Question No : 10 of 50

Marks: 1 (Time 1 Min)

What is the formula of  $\chi^2$  test statistic?

Answer

- ☒  $\frac{nS^2}{\sigma^2}$
- ☐  $\frac{n^2 S^2}{2\sigma^2}$
- ☐  $\frac{S^2}{2\sigma^2}$

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Question No : 11 of 50

Marks: 1 (Time 1 Min)

The mean of the F-distribution is:

Answer

☒  $\frac{v_1}{v_1 - 2}$  for  $v_1 > 2$

☐  $\frac{v_2}{v_2 - 2}$  for  $v_2 > 2$

☐  $\frac{v_1}{v_1 - 2}$  for  $v_1 < 2$

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Question No : 12 of 50

Marks: 1 (Time 1 Min)

To find the confidence interval for the ratio of two variances, we use:

Answer

☒ F-Distribution☐ Z-Distribution☐ T-Distribution☐ Chi-Distribution

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Question No : 13 of 50

Marks: 1 (Time 1 Min)

A hypothesis is a tentative statement about the relationship between how many variables?

Answer

☐ one or more.

☒ two or more.

☐ two.

☐ three.

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Question No : 14 of 50

Marks: 1 (Time 1 Min)

We use t-distribution in when samples size is:

Answer

☒  $n < 30$

☐  $n > 30$

☐  $n = 30$

☐  $n \neq 30$

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Question No : 15 of 50

Marks: 1 (Time 1 Min)

The value of  $\chi^2_{(1)}$  is equal to:

Answer

☐

4.91

☒

5.84

☐

5.33

☐

2.33

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Question No : 16 of 50

Marks: 1 (Time 1 Min)

Mean of the Chi-square distribution is:

Answer

☐

1

☐

2

☒

n

☐

2n

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Question No : 17 of 50

Marks: 1 (Time 1 Min)

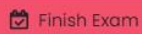
For a random sampling from Normal Population,  $s^2$  is a consistent estimator of.

Answer

☒ Sample variance

☐ Population variance

☐ Both A and B

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Question No : 18 of 50

Marks: 1 (Time 1 Min)

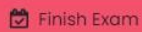
A statistic (estimator)  $s(x)$  is sufficient for ? if conditional density is.

Answer

☐ Dependent of parameter

☐ Equal to parameter

☒ Independent of parameter

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Question No : 19 of 50 Marks: 1 (Time 1 Min) !

If X and Y are independent of each other, the Coefficient of Correlation is

Answer

☐ -1

☐ 0

☒ 1

☐ None of these

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Question No : 21 of 50 Marks: 1 (Time 1 Min) !

By increasing the sample size, the precision of confidence interval is:

Answer

☐ Increased

☒ Decreased

☐ Same

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Question No : 20 of 50 Marks: 1 (Time 1 Min)

Any statistical inference requires some

Answer

☐ Assumptions

☐ Conclusions

☐ Presentations

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Question No : 22 of 50 Marks: 1 (Time 1 Min)

The shape of the t-distribution depends upon the:

Answer

☐ Population size

☐ Parameters

☒ Degrees of freedom

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Question No : 23 of 50

Marks: 1 (Time 1 Min)

In a one-tail test for the population mean, if the null hypothesis is rejected when the alternative hypothesis is not true, then:

Answer

- ☐ a Type I error is committed
- ☐ a Type II error is committed
- ☒ a correct decision is made
- ☐ a two-tail test should be used instead of a one-tail test

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Question No : 24 of 50

Marks: 1 (Time 1 Min)

The point where the Null Hypothesis gets rejected is called as?

Answer

- ☐ Significant Value
- ☐ Rejection Value
- ☐ Acceptance Value
- ☒ Critical Value

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If the assumed hypothesis is tested for rejection considering it to be true is called

Answer

- ☐ Null Hypothesis
- ☐ Statistical Hypothesis
- ☒ Simple Hypothesis
- ☐ Composite Hypothesis

The probability of rejecting a false is

Answer

- ☐ Level of significance
- ☐ Level of confidence
- ☐ Critical region
- ☒ Power of test

Question No : 27 of 50

Marks: 1 (Time 1 Min)

Null and alternative hypotheses are statements about:

Answer

- ☐ sample parameters.
- ☐ sample statistics.
- ☒ it depends - sometimes population parameters and sometimes sample statistics.

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Question No : 28 of 50

Marks: 1 (Time 1 Min)

With a lower significance level, the probability of rejecting a null hypothesis that is actually true:

Answer

- ☐ Decreases
- ☐ Remains the Same
- ☐ Increases

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Question No : 29 of 50

Marks: 1 (Time 1 Min)

On which of the following does the critical value for a chi-square statistic rely?

Answer

☒ The degrees of freedom

☐ The sum of the frequencies

☐ The row totals

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Question No : 30 of 50

Marks: 1 (Time 1 Min)

Using a goodness-of-fit test, we can assess whether a set of obtained frequencies differ from a set of \_\_\_\_\_ frequencies

Answer

☒ Mean

☐ Actual

☐ Predicted

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Question No : 31 of 50

Marks: 1 (Time 1 Min)

For a contingency table, the degrees of freedom is

Answer



4



9



3



6

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Question No : 32 of 50

Marks: 1 (Time 1 Min)

In Chi-Square association, presence of attribute is denoted by

Answer



Capital letters



Greek letters



English letters

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Question No : 33 of 50

Marks: 1 (Time 1 Min)

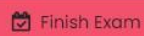
For a contingency table, there are

Answer

☐ 18 cells

☐ 12 cells

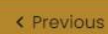
☐ 20 cells

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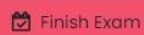
The Yule's coefficient of association lies between

Answer

☐ 0 and 1

☒ -1 and +1

☐ Always negative

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Question No : 35 of 50

Marks: 1 (Time 1 Min)

The chi square distribution is

Answer



Positively skewed



None of these options



Negatively skewed

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Question No : 36 of 50

Marks: 1 (Time 1 Min)

The relation between students t and f distribution is

Answer



$$F_{(1,1)} = t_1^2$$



$$F_{(n,1)} = t_1^2$$



$$F_{(1,n)} = t_n^2$$



All are correct

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Question No : 37 of 50

Marks: 1 (Time 1 Min)

Fishers exact test can be used to test

Answer

☐ The independence of two attributes

☐ Equality of proportions in two classes

☒ Both a and b

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Question No : 38 of 50

Marks: 1 (Time 1 Min)

The credit for deriving the F distribution goes to

Answer

☐ R. A Fisher

☐ G.W. snedecor

☐ W.S Gosset

☒ All of these.

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Question No : 39 of 50

Marks: 1 (Time 1 Min)

The mode of the F distribution is always

Answer

☐ Greater than unity

☒ Less than unity

☐ Zero

☐ -1

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Question No : 40 of 50

Marks: 1 (Time 1 Min)

The square of t distribution follows

Answer

☐ Normal

☒ Chi square

☐ Cauchy

☐ F

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Question No : 48 of 50

Marks: 5 (Time 10 Min)

From the given data  $n=1340, x=723, p=0.54$  and  $H_0: P_0=0.5$  against  $H_1: P_0 \neq 0.5$ .

Carry out the significance test for the stated hypothesis by using  $\alpha = 0.05$

Answer

From the given data  $n=1340, x=723, p=0.54$  and  $H_0: P_0=0.5$  against  $H_1: P_0 \neq 0.5$ .

Carry out the significance test for the stated hypothesis by using  $\alpha = 0.05$

Answer:

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Question No : 46 of 50

Marks: 3 (Time 6 Min)

Write any of three assumptions of t distribution:

Answer

From the given data  $n=1340, x=723, p=0.54$  and  $H_0: P_0=0.5$  against  $H_1: P_0 \neq 0.5$ .

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Question No : 43 of 50

Marks: 3 (Time 6 Min)

Compute the ultimate class-frequencies from the data given below:

$N = 1000$ ,  $(A) = 811$ ,  $(B) = 752$ ,  $(C) = 418$ ,  $(AB) = 570$ ,  $(AC) = 356$ ,  $(BC) = 348$  and  $(ABC) = 297$ .

Answer

Rich text editor toolbar with options: Bold (B), Italic (I), Underline (U), Text color (T), Background color (X), Bulleted list, Numbered list, Decrease indent, Increase indent, Left align, Center align, Right align, Justify, Table, Link, Unlink, Styles, Format, Font, Size, Text color, Background color, and a refresh icon.

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


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










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




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
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



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
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$$H_1: \mu_1 - \mu_2 > 111$$


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







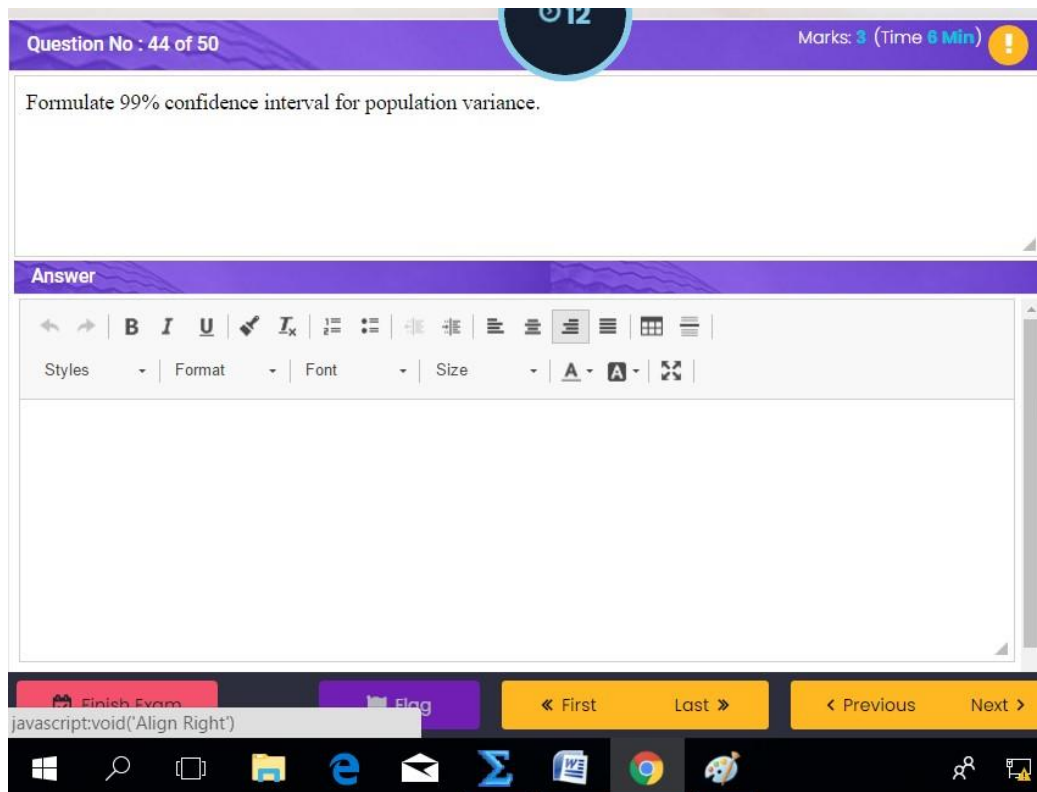



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