Started on	Monday, 21 March 2022, 3:43 PM
State	Finished
Completed on	Monday, 21 March 2022, 3:46 PM
Time taken	3 mins
Marks	0.00/50.00
Grade	**0.00** out of 10.00 (**0**%)

Question **1**

Not answered

Marked out of 1.00

A normal population has a mean of 100 and a variance of 25. How large must be the random sample be if we want the standard error of the sample mean to be 1.5?

- a. 12
- b. 100
- c. 80
- d. 278

The correct answer is:
12

Question **2**

Not answered

Marked out of 1.00

Two samples each of size 20 are taken from independent populations assumed to be normally distributed with equal variances. The first sample has a mean of 43.5 and standard deviation of 4.1 while the second sample has a mean of 40.1 and standard deviation of 3.2. A researcher would like to test if there is a difference between the population means at the 0.05 significance level.

What is the pooled variance?

a. 3.650

b. 5.201

c. 13.525

d. None of these

e. 12.849

The correct answer is:
13.525

Question **3**

Not answered

Marked out of 1.00

Suppose data is obtained from 20 pairs of (x, y) and the sample correlation coefficient is 0.7. Find the test statistic if you want 95% confident that there exist a significant positive linear correlation between x and y.

a. 0.05

b. 4.16

c. None of the other choice is correct

d. 4.27

e. 4.38

The correct answer is:
4.16

Question **4**

Not answered

Marked out of 1.00

Suppose that X has a discrete uniform distribution on the integers 0 to 49. Which of the followings are true?
(i) P(X> 19) = 3/5
(ii) E(2X) = 49.

a. (i)

b. None of the other choices is correct

c. (ii)

d. (i) and (ii)

The correct answer is:
(i) and (ii)

Question **5**

Not answered

Marked out of 1.00

Let X be a continuous random variable with expected value E(X) = 10 and variance V(X) = 4. Find E(X^2).

a. 96

b. 14

c. None of the others

d. 104

The correct answer is:
104

Question **6**

Not answered

Marked out of 1.00

The following statements, which are true? Select one:

a. Dot diagram is not a convenient way to see any unusual data features.

b. Dot diagram is a very useful plot for displaying a small body of data.

c. When the number of observations is large, dot diagram is usually difficult to identify

The correct answer is:
Dot diagram is a very useful plot for displaying a small body of data.

Question **7**

Not answered

Marked out of 1.00

Trang Tien is a producer of ice cream and would like to test the hypothesis that the average consumes more than 17 ounces of ice cream per month. A random sample of 15 Vietnamese people was found to consume an average of 18.2 ounces of ice cream last month. The standard deviation for this sample was 3.9 ounces. What is the test statistic for this hypothesis test?

a. None of the other choices is true

b. 1.83

c. 2.49

d. 3.01

e. 1.19

The correct answer is:
1.19

Question **8**

Not answered

Marked out of 1.00

In a recent survey, 80% of the community favored building a supermarket in their neighborhood. If 25 citizens are chosen, what is the **variance** of the number favoring the supermarket?

- a. 5
- b. 7
- c. 4
- d. 6

The correct answer is:
4

Question **9**

Not answered

Marked out of 1.00

At a computer manufacturing company, the actual size of computer chips is normally distributed with a mean of 1 centimeter and a standard deviation of 0.1 centimeter. A random sample of 12 computer chips is taken. What is the probability that the sample mean will be between 0.99 and 1.01 centimeters? Let $P(Z < 0.1) = 0.54$, $P(Z < 0.346) = 0.64$, $P(Z < -0.346) = 0.37$.

a. 0.37

b. 0.27

c. 0.63

d. 0.73

e. None of the other choices is correct

The correct answer is:
0.27

Question **10**

Not answered

Marked out of 1.00

You are given the following data: 23 34 11 40 25 47

Assuming that these data are a sample selected from a larger population, the median value for these sample data is

- a. 40
- b. 29.5
- c. 34
- d. 25.5

The correct answer is:
29.5

Question 11

Not answered

Marked out of 1.00

Jared was working on a project to look at global warming and accessed an Internet site where he captured average global surface temperatures from 1866. Which of the four methods of data collection was he using?

a. Surveying

b. Retrospective study

c. Experimentation

d. Observation

The correct answer is:
Retrospective study

Question **12**

Not answered

Marked out of 1.00

We measured the weight of 30 rats under experiment controls. Suppose that 12 were underweight rats. Let p be in population. What sample size is needed to be 95% confident that the error in estimating the true proportion of rats that are underweight is less than 2%? Using the point estimate of p obtained from this sample.

Given $z_{0.05} = 1.64$, $z_{0.025} = 1.96$

- a. 1613
- b. 1614
- c. 2305
- d. 2304

The correct answer is:
2305

Question 13

Not answered

Marked out of 1.00

A method of gathering data while the subjects of interest are in their natural environment, often unaware they are being watched, is known as_____

a. experiments

b. observation

c. None of the other choices is correct

d. retrospective

The correct answer is:
observation

Question **14**

Not answered

Marked out of 1.00

The heights (in inches) of adult males in the United States are believed to be normally distributed with mean μ. The average height of a random sample of 25 American adult males is found to be mean of 69.72 inches, and the standard deviation of the 25 heights is found to be s = 4.15. Let z_0.05=1.64, t_0.05,24=1.71. A 90% confidence interval for μ is

a. 69.72 ± 1.42

b. 69.72 ± 1.09

c. 69.72 ± 1.37

The correct answer is:
69.72 ± 1.42

Question **15**

Not answered

Marked out of 1.00

The random variable X represents the number of boys in a family of three children. Assuming that boys and girls are equally likely, find the mean and standard deviation for the random variable X.

a. mean: 2.25, standard deviation: 0.87

b. mean: 1.50; standard deviation: 0.76

c. None of the other choices is correct

d. mean: 2.25; standard deviation: 0.76

e. mean: 1.50; standard deviation: 0.87

The correct answer is:
mean: 1.50; standard deviation: 0.87

Question **16**

Not answered

Marked out of 1.00

Suppose you want to test the claim that $\mu \neq 31.5$, with known σ. If the sample size is $n = 81$ and the level of significance $\alpha = 0.1$, when should you reject H_0?

Let $z_{0.005} = 2.575$; $z_{0.01} = 2.33$, $z_{0.025} = 1.96$ and $z_{0.05} = 1.645$.

a. Reject HO if the test statistic is greater than 1.96 or less than -1.96

b. Reject HO if the test statistic is greater than 2.33 or less than -2.33

c. None of the other choices is correct

d. Reject HO if the test statistic is greater than 1.645 or less than -1.645.

e. Reject Ho if the test statistic is greater than 2.575 or less than -2.575

The correct answer is:
Reject HO if the test statistic is greater than 1.645 or less than -1.645.

Question 17

Not answered

Marked out of 1.00

Which of the following is true regarding the sampling distribution of the mean for a large sample size?

a. It has the same shape and mean as the population, but has a smaller standard deviation

b. It has the same shape, mean, and standard deviation as the population

c. It has a normal distribution with the same mean and standard deviation as the population

d. It has a normal distribution with the same mean as the population but with a smaller standard deviation

The correct answer is:
It has a normal distribution with the same mean as the population but with a smaller standard deviation

Question **18**

Not answered

Marked out of 1.00

Transportation officials tell us that 70% of drivers wear seat belts while driving. Find the probability that more than 579 drivers in a sample of 800 drivers wear seat belts. Let $P(Z < 1.5) = 0.0668$; $P(Z<0.25) = 0.6$.

a. 0.0668

b. 0.6

c. 0.4

d. 0.9332

e. None of the other choices is correct

The correct answer is:
0.9332

Question **19**

Not answered

Marked out of 1.00

The manufacturing of semiconductor chips produces 2% defective chips. Assume the chips are independent and that a lot contains 1000 chips. Approximate the probability that more than 25 chips are defective. Let P(Z≤1.24)=0.893; P(Z ≤ 1.42)=0.922.

a. None of the others

b. 0.893

c. 0.929

d. 0.078

e. 0.107

The correct answer is:
0.107

Question **20**

Not answered

Marked out of 1.00

A survey of senior citizens at a doctor's office shows that 52% take blood pressure-lowering medication, 43% take cholesterol-lowering medication, and 5% take both medications. What is the probability that a senior citizen takes either blood pressure-lowering or cholesterol-lowering medication?

- a. 1
- b. 0.85
- c. 0.14
- d. 0.90
- e. None of the other choices is correct

The correct answer is:
0.90