Statistics MCQs – Sampling Distributions Part 1

1. Choose the correct word (s) from the list below to correctly complete the following sentence: If the original population from which the samples were drawn is not normally distributed, then the sampling distribution of the mean will be _____ for large sample sizes.

a. normal

b. approximately normal

c. the same as the original population distribution

d. unidentifiable

e. uniform

Answer: B

2. Which of the following statements is false?

a. the sampling distribution of the mean will have the same standard deviation as the original population from which the samples were drawn

b. the sampling distribution of the mean will have the same mean as the original population from which the samples were drawn

c. the sampling distribution of the mean will be normal if the original population from which the samples were drawn is normally distributed

d. sample data are used as a basis from which to make probability statements about the true (but unknown) value of the population mean or proportion

e. using information from a sample to reach conclusions about the population from which it was drawn is referred to as inferential statistics

Answer: A

3. Consider a large population with a mean of 160 and a standard deviation of 25. A random sample of size 64 is taken from this population. What is the standard deviation of the sample mean?

a. 3.125

b. 2.500

c. 3.750

d. 5.625

e. 5.000

Answer: A

4. Consider a large population with a mean of 160 and a standard deviation of 20. A random sample of size 64 is taken from this population. What is the standard deviation of the sample mean?

a. 3.125

b. 2.500

c. 3.750

d. 5.625

e. 5.000

Answer: B

5. Consider a large population with a mean of 160 and a standard deviation of 30. A random sample of size 64 is taken from this population. What is the standard deviation of the sample mean?

a. 3.125

b. 2.500

c. 3.750

d. 5.625

e. 5.000

Answer: C

6. Consider a large population with a mean of 160 and a standard deviation of 45. A random sample of size 64 is taken from this population. What is the standard deviation of the sample mean?

a. 3.125

b. 2.500

c. 3.750

d. 5.625

e. 5.000

Answer: D

7. Consider a large population with a mean of 160 and a standard deviation of 40. A random sample of size 64 is taken from this population. What is the standard deviation of the sample mean?

a. 3.125

b. 2.500

c. 3.750

d. 5.625

e. 5.000

Answer: E

8. A sample of size n is selected at random from a large population. As n increases, which of the following statements is true?

a. the population standard deviation decreases

b. the standard deviation of the sample mean decreases

c. the population standard deviation increases

d. the standard deviation of the sample mean increases

e. the standard deviation of the sample mean remains unchanged

Answer: B

9. Which of the following statements is correct?

a. If X is normally distributed then the sample mean is skewed to the right

b. If X is normally distributed then the sample mean is normally distributed with the same mean and variance as X.

c. If X is not normally distributed then the sample mean is approximately normally distributed as long as the sample size is greater than 30

d. If X is not normally distributed then the sample mean is not normally distributed

e. none of the above statements is correct

Answer: C

10. Why is the Central Limit Theorem so important to the study of sampling distributions?

a. It allows us to disregard the size of the population we are sampling from

b. It allows us to disregard the size of the sample selected when the population is not normal

c. It allows us to disregard the shape of the sampling distribution when the size of the population is large

d. It allows us to estimate the sampling distribution of any population when the sample size is large enough is large

e. None of the above is a correct statement

Answer: D

11.In a given year, the average annual salary of professional South African soccer players was R189,000 with a standard deviation of R20,500. If a sample of 50 players was taken, what is the probability that the sample mean of their salaries was more than R192,000?

a. 0.1515

b. 0.3669

c. 0.2451

d. 0.2549

e. 0.3485

Answer: A

12.In a given year, the average annual salary of professional South African soccer players was R189,000 with a standard deviation of R20,500. If a sample of 50 players was taken, what is the probability that the sample mean of their salaries was more than R190,000?

a. 0.1515

b. 0.3669

c. 0.2451

d. 0.2549

e. 0.3485

Answer: B

13.In a given year, the average annual salary of professional South African soccer players was R189,000 with a standard deviation of R20,500. If a sample of 50 players was taken, what is the probability that the sample mean of their salaries was more than R191,000?

a. 0.1515

b. 0.3669

c. 0.2451

d. 0.2549

e. 0.3485

Answer: C

14.In a certain stats class, the marks obtained by students on a class test followed a normal distribution with a mean of 68% and a standard deviation of 10% . What is the probability that the mean test mark from a sample of 25 students from the class was more than 72% ?

a. 0.0228

b. 0.0668

c. 0.1587

d. 0.3085

e. 0.9332

Answer: A

15.In a certain stats class, the marks obtained by students on a class test followed a normal distribution with a mean of 68% and a standard deviation of 10% . What is the probability that the mean test mark from a sample of 25 students from the class was more than 71% ?

a. 0.0228

b. 0.0668

c. 0.1587

d. 0.3085

e. 0.9332

Answer: B

16.In a certain stats class, the marks obtained by students on a class test followed a normal distribution with a mean of 68% and a standard deviation of 10% . What is the probability that the mean test mark from a sample of 25 students from the class was more than 70% ?

a. 0.0228

b. 0.0668

c. 0.1587

d. 0.3085

e. 0.9332

Answer: C

17.In a certain stats class, the marks obtained by students on a class test followed a normal distribution with a mean of 68% and a standard deviation of 10% . What is the probability that the mean test mark from a sample of 25 students from the class was more than 69% ?

a. 0.0228

b. 0.0668

c. 0.1587

d. 0.3085

e. 0.9332

Answer: D

18.In a certain stats class, the marks obtained by students on a class test followed a normal distribution with a mean of 68% and a standard deviation of 10% . What is the probability that the mean test mark from a sample of 25 students from the class was more than 65% ?

a. 0.0228

b. 0.0668

c. 0.1587

d. 0.3085

e. 0.9332

Answer: E

19. The average daily temperature in Johannesburg during summer follows a normal distribution with a mean of 27 degrees Celsius and a standard deviation of 15 degrees Celsius. What is the probability that a randomly chosen sample of 10 summer days will have an average temperature of less than 28 degrees?

a. 0.5832

b. 0.4168

c. 0.3372

d. 0.7357

e. 0.2643

Answer: A

20. The average daily temperature in Johannesburg during summer follows a normal distribution with a mean of 27 degrees Celsius and a standard deviation of 15 degrees Celsius. What is the probability that a randomly chosen sample of 10 summer days will have an average temperature of less than 26 degrees?

a. 0.5832

b. 0.4168

c. 0.3372

d. 0.7357

e. 0.2643

Answer: B

Frequently Asked Questions (FAQs)

- **Kindly send the study materials of statistics exam on january 2023.**

(- de...@ on 28-Nov-2022)

1 Answer

You can send an email to admin@examrace. com or call on + 91 999 800 8851 for getting information related to any subject study material.

- de...@ on 28-Nov-2022