**Edit 2**

**BUS 204**

**Quiz 2 Study Guide**

**as of 10/29/20**

**1. Random Variable is:** a quantity resulting from an experiment that, by chance, can assume different values.

**a)** a random variable that can assume only a countable value.

**b)** a quantity resulting from an experiment that, by chance, can assume different values

**c)** a random variable that can assume any value in an interval.

**d)** the process of converting a normal distribution to its standardized form

**e)** all of these

**e)** none of these

**2. Discrete Random Variable is:**

**a)** a random variable that can assume only a countable value

**b)** a quantity resulting from an experiment that, by chance, can assume different values

**c)** a random variable that can assume any value in an interval

**d)** the process of converting a normal distribution to its standardized form

**e)** all of these **f)** none of these

**3. Continuous Random Variable is:** a random variable that can assume any value in an interval.

**a)** a random variable that can assume only a countable value.

**b)** a quantity resulting from an experiment that, by chance, can assume different values

**c)** a random variable that can assume any value in an interval.

**d)** the process of converting a normal distribution to its standardized form

**e)** all of these

**f)** none of these

**4. Standardization is:** the process of converting a norm distribution to its standardized form

**a)** is the process of converting a normal distribution to its standardized form.

**b)** the difference between a sample statistic and its corresponding population parameter.

**c)** a sample selected so that each item or person in the population has the same chance of being included.

**d)** a distribution of all possible values of a statistic for a given-size random sample selected from a population.

**e)** all of these

**f)** none of these

**5. Sampling Error is:** the difference between a sample statistic and its corresponding population parameter.

a) is the process of converting a normal distribution to its

 standardized form

b) the difference between a sample statistic and its corresponding population parameter

c) a sample selected so that each item or person in the population has the same chance of being included.

d) a distribution of all possible values of a statistic for a given-size random sample selected from a population.

e) all of these

f) none of these

**6. Simple Random Sample is:** a sample selected so that each item or person in the population has the same chance of being included.

**a)** is the process of converting a normal distribution to its standardized form.

**b)** the difference between a sample statistic and its corresponding population parameter.

**c)** a sample selected so that each item or person in the population has the same chance of being included.

**d)** a distribution of all possible values of a statistic for a given-size random sample selected from a population.

**e)** all of these

**f)** none of these

**7. Sampling Distribution is:** a distribution of all possible values of a statistic for a given-size random sample selected from a population.

**a)** is the process of converting a normal distribution to its standardized form

**b)** the difference between a sample statistic and its corresponding population parameter

**c)** a sample selected so that each item or person in the population has the same chance of being included

**d)** a distribution of all possible values of a statistic for a given-size random sample selected from a population

**e)** all of these

**f)** none of these

**8. Sampled Population is:** the population from which the sample is taken.

**a)** the population from which the sample is taken.

**b)** is a random starting point is selected and then every *kth* member of the population is selected

**c)** a population is divided into subgroups called strata.

**d)** a random starting point is selected. And then every *kth* member of the population is selected

**e)** all of these

**f)** none of these

**9. Systematic Random Sample** **is:** a random starting point is selected. And then every *kth* member of the population is selected.

**a)** is a random starting point is selected and then every *kth* member of the population is selected.

**b)** a population is divided into subgroups called strata.

**c)** a sample from a population that is divided into clusters using naturally occurring geographic or other boundaries.

**d)** a listing of the elements that the sample will be selected from.

**e)** all of these

**f)** none of these

**10. Stratified Random Sample is:** a population is divided into subgroups. Called strata, and a sample is randomly selected from each stratum.

**a)** is a random starting point is selected and then every *kth* member of the population is selected.

**b)** a population is divided into subgroups called strata

**c)** a sample from a population that is divided into clusters using naturally occurring geographic or other boundaries

**d)** a listing of the elements that the sample will be selected from

**e)** all of these

**f)** none of these

**11. Cluster Sample is::** a sample from a population that is divided into clusters using naturally occurring geographic or other bound **a)** is a random starting point is selected and then every *kth* member of the population is selected.

**b)** a population is divided into subgroups called strata.

**c)** a sample from a population that is divided into clusters using naturally occurring geographic or other boundaries.

**d)** a listing of the elements that the sample will be selected from.

**e)** all of these

**f)** none of these

**12. Frame is:** a listing of the elements that the sample will be selected from.

**a)** random number

**b)** a population is divided into subgroups called strata.

**c)** a sample from a population that is divided into clusters using naturally occurring geographic or other boundaries.

**d)** a listing of the elements that the sample will be selected from.

**e)** all of these

**f)** none of these

**13. Target Population** needs to correspond as closely as possible to the sampled population:

T/F

**14. Sampling Distribution is:** a probability distribution consisting of all possible values of a sample statistic.

**a)** a probability distribution consisting of all possible values of a sample statistic.

**b)** the statistic is a single value (statistic) used to estimate a population value (parameter). It is the center of the interval.

**c)** the difference between a value (a statistic) computed from a sample and the corresponding value (a parameter) computed from the population.

**d)** is a range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability. The specified probability is called the level of confidence.

**e)** all of these

**f)** none of these

**15. Point Estimate is:** the statistic, is a single value (statistic) used to estimate a population value (parameter). It is the center of iterval.

**a)** a probability distribution consisting of all possible values of a sample statistic.

**b)** the statistic is a single value (statistic) used to estimate a population value (parameter). It is the center of the interval.

**c)** the difference between a value (a statistic) computed from a sample and the corresponding value (a parameter) computed from the population.

**d)** a range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability. The specified probability is called the level of confidence.

**e)** all of these **f)** none of these

**16. Sampling Error is:** the difference between a value (a statistic) computed from a sample and the corresponding value (a parameter) computed from the population

**a)** a probability distribution consisting of all possible values of a sample statistic.

**b)** the statistic is a single value (statistic) used to estimate a population value (parameter). It is the center of the interval.

**c)** the difference between a value (a statistic) computed from a sample and the corresponding value (a parameter) computed from the population.

**d)** a range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability. The specified probability is called the level of confidence.

**e)** all of these

**f)** none of these

**17. Confidence Interval** **is:** a range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability. The specified probability is called the level of confidence.

**a)** a probability distribution consisting of all possible values of a sample statistic.

**b)** a single value (statistic) used to estimate a population value (parameter). It is the center of the interval.

**c)** the difference between a value (a statistic) computed from a sample and the corresponding value (a parameter) computed from the population.

**d)** a range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability. The specified probability is called the level of confidence.

**e)** all of these

**f)** none of these

**18. Proportion is: :**  the fraction, ratio, or percent indicating the part of the sample or the population having a particular trait of intelar characteristic.

**a)** the fraction, ratio, or percent indicating the part of the sample or the population having a particular trait of interest or a particular characteristic.

**b)** the +/- value added to and subtracted from a point estimate to develop an interval estimate of a population parameter.

**c)** the confidence associated with an interval estimate. A percentage of less than 100 that corresponds to the percentage of all possible confidence intervals, based on the given sample size, that will contain the true population parameter.

**d)** all of these

**e)** none of these

**19. Margin of Error is:** the +/- value added to and subtracted from a point estimate to develop an interval estimate of a population parameter.

**a)** the fraction, ratio, or percent indicating the part of the sample or the population having a particular trait of interest or a particular characteristic.

**b)** the +/- value added to and subtracted from a point estimate to develop an interval estimate of a population parameter.

**c)** the confidence associated with an interval estimate.

**d)** all of these

**e)** none of these

**20. Confidence Level:**

**a)** the confidence associated with an interval estimate. A percentage of less than 100 that corresponds to the percentage of all possible confidence intervals, based on the given sample size, that will contain the true population parameter.

**b)** the fraction, ratio, or percent indicating the part of the sample or the population having a particular trait of interest or a particular characteristic.

**c)** the +/- value added to and subtracted from a point estimate to develop an interval estimate of a population parameter.

**d)** the confidence associated with an interval estimate

**f)** all of these

**f)** none of these

**21**.**Which of the following statement(s) is(are) correct with regards to the concept of probability distributions:**

**a)** A listing of all the outcomes of an experiment and the probability associated with each outcome.

**b)** The choice of which distribution to use depends on which the random variable is discrete or continuous.

**c)** all of these

**d)** none of these

**22. Which of the following statement(s) is(are) correct with regards to the characteristics of a Probability Distribution:**

**a)** the probability of a particular outcome is between 0 and 1.

**b)** the outcomes are mutually exclusive events

**c)** the sum of probabilities of the various events is equal to 1.

**d)** random variable values are determined by counting

**e)** all of these

**f)** none of these

**23. Which of the following statement(s) is(are) correct with regards to the concept of Binomial Probability Distribution:** a distribution that gives the probabilities of x successes in n trials iprocess that meets the following conditions:

**a)** a trial has only two possible outcomes: a success or a failure.

**b)** there is a fixed number, n, of identical trials.

**c)** the trials of an experiment are independent from each other.

 That means that if one outcome is a success, this does not

 influence the chance of another outcome being a success.

**d)** the probability, p, associated with a success remains constant

 from trial to trial.

**e)** if the total number of possible outcomes cannot be determined,

 the binomial distribution cannot be applied.

**f)** it is useful when the values of a discrete random variable are

 based on independent trials and in a given trial there are only

 two possible outcomes.

**g)** all of these

**h)** none of these

**24. Which of the following statement(s) is(are) correct with regards to the concept of Poisson Probability Distribution, it is:**

**a)** a process that extends over time and space. It describes the number of times some event occurs during a specified interval (i.e. the number of misspelled words per page in a newspaper. The interval may be time, distance, area, or volume. Also:

**b)** the random variable is the number of times some event

 occurs during a defined interval.

**c)** the probability of the event is proportional to the size of the

 interval.

**d)** the intervals do not overlap and are independent.

**e)** the longer the interval, the larger the probability, and the

 number of occurrences in one interval does not affect the

 other intervals.

**f)** a discrete probability distribution because it is derived by counting.

**g)** it deals with situations in which the trials are independent, but we can count only the successes.

**h)** all of these

**i)** none of these

**25. Which of the following statement(s) is(are) correct with regards to the concept of the Uniform Distribution, it is/has:**

**a)** a continuous probability distribution

**b)** rectangular in shape

**c)** the mean and the median and equal

**d)** on the x-axis it has two values: b = maximum and

 a = minimum

**e)** the probability over any interval of the continuous random

 variable is the same as for any other interval of the same

 width.

**f)** random variable values are determined by measuring.

**g)** all of these **h)** none of these

**26. Which of the following statement(s) is(are) correct with regards to the concept of a Normal Distribution? It is/has:**

**a)** a continuous probability distribution with the following characteristics:

**b)** bell-shaped

**c)** unimodal: that is, it peaks at a single value

**d)** symmetrical; this means that the two areas under the curve between the mean and any two points on the opposite side of the mean are identical. One side of the distribution is a mirror image of the other side.

**e)** the mean, median, and mode that are equal.

**f)** asymptotic to the x-axis.

**g)** the amount of variation in the random variable determines the width of the normal distribution.

**h)** all of these

**i)** none of these

**27. Which of the following statement(s) is (are) correct with regards to the concept of Standard Normal Distribution? It is/has:**

**a)** a continuous probability

**b)** a normal distribution that has a mean = 0 and a standard deviation = 1

**c)** the horizontal axis is scaled in z-values that measure the number of standard deviations from the mean

**d)** values above the mean have positive z-values. Values below the mean have negative z-values.

**e)** all of these

**f)** none of these

**28. Which of the following statement(s) is (are) correct with regards to the concept of** **Exponential Distribution? It is/has:**

**a)** a continuous probability distribution.

**b)** used to measure the time that elapses between two occurrences of an event

**c)** all of these

**d)** none of these

**29. The Central Limit Theorem states:**

If all samples of a particular size are selected from any population, the sampling distribution of the sample mean is approximately a normal distribution. This approximation improves with a larger sample.

**T/F**

**30. Sampling Distribution of a Mean states:**

If a population is normally distributed, with mean μ and a standard deviation of σ, the sampling distribution of the sample mean $\overline{x}$ is also normally distributed with the mean equal to the population mean and the standard deviation equal to the population standard deviation divided by the positive square root of the sample size.

**T/F**

**31. Which of the following statement(s) is(are) correct with regards to the factors determining the sample size:**

**a)** the desired level of confidence is typically expressed as, **z**

**b)** the maximum allowable error = **E**

**c)** the variation in population (standard deviation), = **s**

**d)** all of these

**e)** none of these

**32.** **Which of the following statement(s) is(are) correct with regards to the concept of a confident interval:**

**a)** The objective is to estimate a population value based on information from a sample

**b)** There are two types of estimates: point estimates and interval estimates

**c)** The point estimates are subject to potential sampling error

**d)** Point estimates are almost always different from population values

**e)** The confidence interval estimate takes into account the potential for sampling error and provides a range within which the true population value may fall

**f)** all of these

**g)** none of these

**33. Which of the following factors determine the width of a confidence interval for a mean:**

**a)** the number of observations in the sample, ***n***

**b)** the variability of the population, usually estimated by the

 sample standard deviation, ***s***

**c)** the level of confidence

**d)** the standard levels of confidence: 90%, 95%, 99%

**e)** all of these

**f)** none of these

The confidence level expressed as a decimal value. For example, 0.95 is the confidence coefficient for a 95% confidence level. It is the decimal equivalent of a confidence level.

**34. Which of the following statement(s) is(are) correct with regards to the concept of confidence coefficient:**

**a)** the confidence level expressed as a decimal value.

**b)** 0.95 is the confidence coefficient for a 95% confidence level.

**c)** It is the decimal equivalent of a confidence level.

**d)** it is a family of probability distributions that can be used to develop an interval estimate of a population mean whenever the population standard deviation is unknown and is estimated by the sample standard deviation.

**e)** all of these

**f)** none of these

**35. t-distribution is:**

A family of probability distributions that can be used to develop an interval estimate of a population mean whenever the population standard deviation is unknown and is estimated by the sample standard deviation.

**T/F**

**36. Which of the following statement(s) is(are) correct with regards to the concept of degrees of freedom:**

**a)** a degree of freedom is a parameter of the t-distribution.

**b)** as the degrees of freedom increase, the t-distribution approaches the normal distribution

**c)** it is the number of independent data values available to estimate the population’s standard deviations

**d)** the degrees of freedom = sample size -1

**e)** all of these

**f)** none of these

**37. What are the major characteristics of the t distribution? It is:**

**a)** a continuous distribution

**b)** bell-shaped and symmetrical

**c)** flatter and more spread out than the standard normal

 distribution

**d)** there is a family of **t** distributions, depending on the degrees

 of freedom.

**e)** all of these

**f)** none of these

**38. Which factors determine the sample size for proportions:**

**a)** the desired level of confidence that is typically expressed as, **z**.

**b)** the maximum allowable error is expressed as **E**.

**c)** if no estimate is available use 0.50

**d)** all of these

**e)** none of these

**39. Parameter is a numerical characteristic of a population:**

**T/F**

**40. A property is unbiased when:** all members of the population have a chance of being selected for the sample:

**T/F**