There is one best answer for each question. read these carefully even though they may look similar to questions you

My Grandmother is watching you. Do not Cheat!

BA3300 Exam no.:

Acknowledging that perjury may be a prosecutable criminal offense, I swear under penalty of law that I have not and will not give or receive any unauthorized assistance on this exam.

Name:

1. F test
A. compares two sample means
B. compares two variances
C. compares two population means
D. computes the P value
E. compares three or more variances

2. Your calculated t observed is -2.4. Tdist function gives an error. what should you do to fix it?
A. close EXCEL and reboot. this is a common bug.
B. get a new calculator.
C. use the abs() function in entering the Tobs reference
D. The thing wanted X, not T!
E. t is too big and is outside the range
F. must do F test first

3. Which of the following is NOT a way to reduce variance?
A. Bigger Sample
B. Bigger Alpha
C. cut out drinking alcohol at work
D. Better measuring techniques
E. Compare apples to apples

4. What is the probability, when the null hypothesis is true, of obtaining a sample result that is at least as unlikely as what is observed?
A. type I error, alpha
B. type II error, beta
C. p-value
D. critical value, rejection cutoff
E. one-tailed test

5. The standard error of the mean when n>1
A. is less than the standard deviation of the population
B. Decreases as the sample size increases
C. Measures the variability of the mean from sample to sample
D. All of the above
E. becomes even more variable as n increases

6. In a two-tailed test with 95% confidence interval, what percent of your sample means would fall outside the interval and below the population mean?
A. 5
B. 2.5
C. 1
D. 0.5
E. 10

7. The value of the F statistic ranges between:
A. -1 to 0
B. 0 to +1
C. -1 to +1
D. 1 to infinity
E. 0 to infinity, always positive because it is a square

8. Since the Tinv function assumes a 2-tail test, what do we need to do to make sure we have the appropriate alpha, for a 1-tail test?
A. enter in 1/2 of alpha
B. enter -alpha
C. double alpha
D. always use .05
E. Don't use TINV, calculate it directly.

9. use TINV to calculate____?
A. probability of t
B. 1/t
C. critical t
D. p-value
E. none of the above

10. What is the function used in Excel to determine the p-value in a ttest?
A. TINV
B. STDEV
C. TDIST
D. ABS
E. PROBVAL

11. If Ho cannot be rejected, one should
A. Accept Ha
B. Accept the null hypothesis
C. realize it may be false anyway
D. Reject the null hypothesis
E. question assumptions behind Ho

12. The purpose of statistical inference is:
A. to find the sample population
B. provide employment for statisticians
C. to develop estimates and test hypotheses about the characteristics of a population using information from the sample
D. to find the standard deviation.
E. to develop a basis to conduct an F-test

13. Ha in ANOVA:
A. means are all the same, no effect of treatments
B. At least two means are different

C. Means are all different

D. At least two means are the same

E. This is a trick, there are no means in ANOVA, just variances.

14. "PLAR" was used as a mnemonic for

A. P-value less than alpha squared reject

B. P-value leans against radical.

C. P-value less than abeta reject

D. P-value less than alpha reject Ho.

E. P-value less than alpha reduce

15. The purpose of the critical value is:

A. to determine the mean

B. helps you find the z-score

C. to separate the rejection region from the non rejection region

D. determines the sample size

E. This is the assumed value of the hypothetical mean

16. Averaging _____ variance.

A. adds

B. determines and displays

C. does not affect

D. reduces or eliminates

E. disproves

17. The mean score of a normally distributed curve of management and organizational behavior students' test scores was 54, with a standard deviation of 6. Ralph got a 68, and he wants to know how many people scored higher than him. What is the t-score he must use to compute the probability?

A. -1.75

B. 1.75

C. 2.33

D. -2.33

E. 2.1

18. what is usually true of a null hypothesis:

A. it is usually designed to be rejected to give evidence for the alternative.

B. even when not rejected, it shouldn't be accepted as true

C. even when rejected, there is some probability it is true

D. all of the above

E. none of the above

19. If you have a Pvalue of .032, what is your confidence level?

A. 95%

B. 3.2%

C. 68%

D. 96.8%

E. You are not given enough information to calculate confidence level.

20. A statistician measures average length of fish in Creve Coeur Lake and arrives at a confidence interval for the length of 6.5 to 7.5 centimeters. What is the probability that the sample mean is included in this 95% confidence interval?

A. 0 %

B. 95%

C. 100%

D. 5%

E. it depends on whether you use T or Z curves.

21. The theorem that enables one to use the normal probability distribution to approximate the sampling distribution of x bar and probability whenever the sample size is large

A. Central limit theorem

B. Distribution theorem

C. Sampling theorem

D. Probability theorem

E. Pavlovian evolution of midway large numbers

22. One hundred beer drinkers were randomly sampled and a 90% confidence interval for the average consumption of all beer drinkers was constructed. The interval was 5, 11 Give a practical interpretation of the interval.

A. 90% of all beer drinker's consumption falls between 5 and 11.

B. We are 90% confident that the mean consumption of the beer drinkers in this sample falls in the interval of 5 and 11.

C. We are 90% confident that the mean consumption of all beer drinkers falls in the interval 5 to 11.

D. 90% of the sampled beer drinker's consumption fell in the interval 5 and 11

E. only 10 percent of the time would this result fail to occur in repeat testing as long as n>25.

23. If after doing some testing on a given sample we found our P value to be .6789 and we had an alpha of 5%, we could conclude that:

A. the probability of getting the null hypothesis is very good

B. the probability of rejecting the alternative hypothesis is very high.

C. there is sufficient evidence to reject the null hypothesis.

D. there is inadequate evidence to reject the null hypothesis.

E. the chances of this happening again are about 62. 89% higher than before the test (ergo post facto)

24. If the observed mean for a sample is 14, the hypothesized mean is 0, the standard deviation is 20, and n=100. What is the T value?

A. 7

B. 0.70

C. -0.7 except excel won't work with negatives

D. 0.14

E. 2.8

25. We think an average worker is able to rebuild a transmission in 5 hours. Is this substantiated with 95% confidence if we observe 100 workers and they average 5.3 hours with a standard deviation of 1 hour?

A. no. reject the null hypothesis
B. we do not have enough info to make a decision
C. yes. accept the null hypothesis.
D. no. accept the null hypothesis.
E. yes. reject the null hypothesis

26. To find the Upper Limit of the confidence interval when using EXCEL descriptive statistics:
A. Subtract the mean from 1.96 standard error
B. Add the mean to what EXCEL calls the "confidence level"
C. Subtract what EXCEL calls the "confidence level" from the mean
D. Add the mean to the standard deviation
E. Subtract the standard deviation from the sample size

27. The EPA claims that a brand of SUV gets 12 miles per gallon or less when driven on the highway. The manufacturer disagrees with this claim and wants to show that their car gets significantly more than 12 mpg. What is the alternative hypothesis?
A. Ho: mu = 12
B. Ha: mu < or = 12
C. Ho: mu > 12
D. Ha: mu > 12
E. Ha: mu < 25

28. How do you determine what confidence level to use in a statistical test?
A. Standard Deviation /P Value
B. It is a subjective number depending on needs
C. T Value / Square root of variance
D. Kurtosis always equals confidence level
E. by taking the square root of the number in the sample and dividing the difference by p / 1. 96*z

29. What does the p value mean?
A. The probability of accepting the null hypothesis when it is false.
B. The probability of getting the observed test statistic when the null hypothesis is true
C. 1 minus the Z score of the test statistic
D. The cut-off region for rejecting the alternate hypothesis
E. The probability that we got the test statistic

30. A swimming pool firm claims its average installation time is 7.5 days with a standard deviation of 2 days. A random sample of 100 installation times is taken. If their claim is
true,what is the approximate probability the sample mean is between 7.0 days and 8.0 days?
A. about 0.5
B. less than 0.02
C. less than 0.20
D. more than 0.98
E. about 0.25, or 0.5 / 2
F. 0.673

31. For a confidence interval of 95% in a 2-tailed distribution, what percent would be in each of your tails?
A. two times 5%, or a total of 10%
B. 2.5%
C. 5%
D. 90% so you get 5% in each tail
E. 95%

32. "Way out" observations should
A. cause you to accept the null hypothesis
B. Not make any sense
C. make you question your assumptions
D. Occur in every t-test
E. never happen except by chance

33.What does the two-way ANOVA test allow us to do?
A. It does nothing statistical, it is for entertainment purposes only
B. Takes out the variance of one effect to reduce error that may hide other relationships
C. It corrects for the beta risks
D. Determine slopes in two directions at once
E. It gives us with 95% confidence the amount of risks associated with a type 1 error.

34. I want to know if the hours per week that the students in my class study is still 15 or if it has changed. Using a confidence level of 95%, I calculate the p-value for a sample size 30 with a mean of 13.9. The p-value is 0.0019. What conclusion can I draw?
A. reject Ho
B. No conclusion can be drawn from this information.
C. do not reject Ho
D. reject Ha
E. Accept Ho

35. A random sample of 50 baseball players gave a 95% confidence interval for the average number of times they were hit by a pitch of 22 times, 35 times. The practical interpretation of this is:
A. 95% of baseball players have been hit between 22 and 35 times by a pitch.
B. 95% of the sampled baseball players have been hit between 22 and 35 times by a pitch.

C. We are 95% confident that the average number of times a player is hit by a baseball is between 22 and 35.

D. If we picked a baseball player at random, there is only a 5% chance he has been hit more than 35 times or less than 22 times. (because alpha=5%).

E. This is what is meant by a "hitting streak"

36. When would you use a t-test instead of a z-test?

A. whenever population mean and standard deviation are unknown.

B. when we have a random sample

C. when we use a confidence level above 90%

D. when our sample is large

E. we can use either test interchangeably

F. if a majority of people around you use the t-test

37. If you observe that F is greater than alpha

A. use a paired t test assuming equal variance

B. reject the null hypothesis

C. accept the null hypothesis

D. raise alpha to avoid a type I error

E. this is usually the case. you are comparing the wrong things

38. Last Year records of Schnuck's showed mean amount spent by customer was $30. A sample of 36 transactions this week revealed mean amount spent was $33 with standard deviation of $12. At 0.05 significance level can we conclude that mean amount spent has increased?

A. There was an increase in mean amount spent

B. inadequate evidence to conclude any of these with 95% confidence.

C. There was a decrease in mean amount spent

D. No increase in mean amount spent

E. No change in mean amount spent

39. A fluorescent light tube lasts on average 2000 hours before it has to be replaced. This lifetime is normally distributed with a standard deviation of 100 hours. About how frequently should you relamp (change out all the bulbs at once) so that there are likely to be more than 85% of the tubes still working?

A. 200 hours

B. 1900 hours

C. 300 hours

D. 600 hrs because it's 2-tailed

E. 1.5 light-years

40. Probability of an airplane engine failing is a normal distribution function of the number of flight hours since its last overhaul. The mean failure time is 20,000 hours with a standard deviation of 4,000 hours. If you would like less

than a 2% chance of breakdown, about how often should you overhaul the engines?

A. 16,000

B. 400

C. 18,000

D. 22,000

E. 11,800

F. 28,400

41. A result was said to be statistically significant at the 1% level. This means:

A. We are only 1% confident the null hypothesis is true.

B. the null hypothesis is probably true.

C. The alternative hypothesis must be true.

D. the result would be unlikely if the null hypothesis were true.

E. We have just proven the null hypothesis.

42. when using TDIST What is put in the box labeled by "X"?

A. Mean

B. Tobserved

C. The total number observed

D. 0.05

E. the individual X value that we are trying to get the T value of.

43. ANOVA can be viewed as _____ the total sum of squares and degrees of freedom into their corresponding sources: treatments and error.

A. consolidating

B. partitioning

C. expectorating

D. regurgitating

E. prevaricating

44. In the two -way ANOVA with replication, Interaction means that:

A. neither variable has an effect without the other one

B. Both variables have an effect, not just one of them, thus they interact rather than one just sitting there doing nothing.

C. The effect of one variable is modified by the level of the other

D. the interaction causes the replications giving more within to the sum of squares

E. interaction means the slopes rise with time. In a negative interaction slopes fall with time.

F. there is a reaction within so that the variance has heteroskedasticity

G. interaction proves that sales will go up no matter what because both variables affect it.

H. interactions mean there is difference in the variance of the two variables

I. there is a relevant correlation between the variables that
is statistically significant.