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COURSE NAME:

**Business Statistics**

Assignment Title:

**Multiple Choice questions and answers**

ATLANTIC INTERNATIONAL UNIVERSITY

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# Introduction

This is a series of multiple-choice questions related to the course material. It is designed to put in order the way of learning the subject to make it easier and more logical as to how to use statistics but also the benefits available while acknowledging the limitation of statistics.

The purpose is to explain how the statistics are used to predict the future. It shows the important concepts such as confidence, probability, central tendency, standard deviation and distributions so the student will understand how they work together to show what we can expect to see in the future. The correct answer is in italics.

# Body of Assignment

1)What is the purpose of studying statistics?

1. To understand numbers
2. *To predict the future*
3. To know the average
4. To help understand data

2) How are statistics used effectively?

1. Finding data that does not fit expectations
2. Create a model based on past performance to predict what will happen next
3. Understand what affects changes in outcomes
4. *All of the above*

3) What is the confidence level?

1. *The percentage of times you should be right*
2. The level of interest in the study
3. The error level required
4. None of the above

4) What is probability?

1. What will probably be the result
2. The level of confidence you have in your study
3. *The likelihood your prediction will be correct*
4. The expected result

5) How can you be 95% confident of a result?

1. *Factor in a level of error from experience*
2. Accept that you may be wrong 5% of times
3. Produce multiple possible answers
4. Take back percentage points based on the situation

6) What is the limit to a level of error?

1. 5%
2. The standard error
3. 100%
4. *It is unlimited*

7) What is a distribution?

1. The data shared between sources
2. The division of data into categories
3. *The mapping of the data*
4. The giving of data

8) What is the normal distribution (the bell curve)

1. *The ideal distribution of data to allow for accurate predictions*
2. The standard distribution based on experience
3. A mapped data set showing normal trends
4. The expected distribution of the data

9) What is the mean?

1. *It is the total sum of the values divided by the number of values*
2. It is the lowest possible value
3. It is the highest value minus the lowest value
4. It is the highest value added to the lowest value

10) What is the median?

1. The average value
2. The most frequently occurring value
3. *The center value when the values are in order*
4. The distance from the mean

11) What is the mode?

1. The sum of all values
2. The difference between the highest and lowest value
3. The difference between the highest value and the mean
4. *The most frequently occurring value*

12) What is central tendency?

1. The sum of the mean, median and mode
2. The average of the mean, median and mode
3. The difference between the mean median and mode
4. *The proximity of the mean median and mode*

13) What is the relationship between central tendency and the normal distribution?

1. *Where central tendency is 0, we may have the normal distribution*
2. Central tendency is how close the normal distribution is to accurate predictions
3. The % of central tendency gives us the confidence level for using the normal distribution
4. The central tendency is our error level

14) Does confidence level give a probability of the result occurring?

1. Yes, it accurately defines the probability
2. No, it tells us the error level
3. Yes, it gives us the expected value
4. *No, it tells the likelihood of the value falling in the range mean +/- error level*

15) Does probability have a confidence level?

1. Yes 95%
2. Yes 90%
3. *It depends on the data*
4. It depends on the standard deviation

16) Why are statistics usually measured with 95% confidence

1. *It is considered statistically relevant*
2. It is the closest value to 100% allowing adequate error
3. It shows a high confidence level
4. It is not important

17) How do we measure how far our data is away from the mean?

1. Central tendency
2. *The standard Deviation*
3. The mode
4. The range

18) What is the standard deviation?

1. The total distance of all points from the mean
2. The median distance of all points from the mean
3. *The mean distance of all points from the mean*
4. The range of the distances of all points from the mean

19) A low standard deviation indicates.

1. *The values are close and therefore the data is good*
2. The error level of our data
3. We do not have enough data
4. The data quality is not good

20) What is a trend?

1. A sequence of values that are close to the mean
2. A sequence of values that increase in a given order
3. A series of values that can be linked through statistics
4. *A sequence of values that can be explained*

21) A standard deviation of 0 means?

1. You can predict what will happen next
2. *You can predict what will happen next if you identify a trend*
3. The central tendency will be 0
4. The confidence level is 95%

22) Can I still predict the future with a high error level?

1. No, it is too random
2. *Yes, but accepting there will be variances*
3. No, it does not have 95% confidence level
4. Yes, accurately

23) Can the error level indicate the probability of predicting the future?

1. Yes, the higher the error level, the higher the probability
2. No, the higher the error level, the higher the probability
3. *Yes, the lower the error level, the higher the probability*
4. No, the lower the error level, the higher the probability

24) In what industries are statistics used for projecting future performance?

1. None
2. Service industries
3. Manufacturing industries
4. *All industries*

25) What is the weakness in using only the average value?

1. It includes all values, including the values unlikely to reoccur
2. It doesn’t include error values
3. It can be based on selected data
4. *All of the above*

26) What is the weakness in using probability?

1. It is rarely accurate
2. *It depends on how it is calculated*
3. It is only based on 95% confidence
4. All of the above

27) What is the weakness in using statistics to predict the future?

1. They can be based on unreliable data
2. They only reflect what happened in the past
3. They do not include qualitative data
4. *All of the above*

28) How are statistics used most accurately to predict future values?

1. Remove and understand values that deviate significantly from the expected values
2. Use only reliable data
3. Factor in qualitative values
4. *All of the above*

# Conclusion

The goal is to make sure the student understands that the goal is to see what will happen in the future, reflecting uniquely on what has happened in the past. To do this we use data distributions. We compare those distributions to our ideal distribution, i.e. the normal distribution, as see how far we are away from that.

The idea is we know we can predict securely with the normal distribution, but if our data varies too significantly from that, measured by central tendency and standard deviation, then we may not have a reliable model.

WE also reflect on how confident we are in our model, which means we can say anything with a level of error, e.g. I will fall down today. It may not be true but is I say I will fall down today +/- 50 years then it is true. This shows that confidence is good, but we need to know the error level. We must not complicate that with probability, which predicts the likelihood of an event occurring. Even probability though may not be accurate if you do not use the correct data to calculate.