

Student name: _____

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) Data analytics is the process of evaluating data with the purpose of drawing conclusions to address business questions.

- ☐ true
- ☐ false

2) The process of data analytics aims to transform raw information into data to create value.

- ☐ true
- ☐ false

3) Data analytics has the potential to transform the manner in which companies run their businesses, however it

is not practical in the near future.

- ☐ true
- ☐ false

4) Auditors can use social media to hear what customers are saying about a company and compare this to inventory

obsolescence and other estimates.

- ☐ true
- ☐ false

5) Data analytics allows auditors to glean insights that are beneficial to the client, without breaching independence.

- ☐ true
- ☐ false

6) The predictive

analytics is an important aspect of data analytics for auditors, but is not applicable for tax accountants.

- ☐ true
- ☐ false

7) The I in IMPACT Cycle represents Identify the Question.

- ☐ true
- ☐ false

8) The M in IMPACT Cycle represents Master the Data.

- ☐ true
- ☐ false

9) The P in IMPACT Cycle represents Predict the Results.

- ☐ true
- ☐ false

10) The A in IMPACT Cycle represents Analyze the Data.

- ☐ true
- ☐ false

11) The C in IMPACT Cycle represents Continuously Track.

- ☐ true
- ☐ false

12) The T in IMPACT Cycle represents Track Outcomes.

☐ true

☐ false

13) The IMPACT cycle is iterative, as insights are gained, outcomes are tracked, and new questions are identified.

☐ true

☐ false

14) Data analytics professionals estimate that they spend between 25 percent and 70 percent of their time cleaning data so it can be analyzed.

☐ true

☐ false

15) Data analysis through data manipulation is performing basic analysis to understand the quality of the underlying data

and its ability to address the business question.

☐ true

☐ false

16) To be proficient in data analysis, accountants need to become data scientists.

☐ true

☐ false

17) By developing an analytics mindset, accountants will be able to recognize when and how data analytics can address business questions.

☐ true

☐ false

18) While it is

important for accountants to clearly articulate the business problem, drawing appropriate conclusions, based on the data,

- Ⓐ true
- Ⓑ false

should be left to statisticians.

19) Analytic-minded accountants should report results of analysis in an accessible way to each varied decision maker and their specific needs.

- Ⓐ true
- Ⓑ false

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

20) With a goal to give organizations the information they need to make sound and timely business decisions, data

- A) technologies.
- B) statistics.

analytics often involves all of the following *except*:

- C) growth.
- D) databases.

21) Patterns discovered from _____ enable businesses to identify opportunities and risks and better plan for _____.

- A) past archives; the future
- B) current data; the future
- C) current data; today

D) past archives; today

22) Which of the following best describes the goal of descriptive data analysis:

- A) recognize what is meant by data quality, be it completeness, reliability or validity
- B) perform basic analysis to understand the quality

of the underlying data and its ability to address the business question

- C) demonstrate

ability to sort, rearrange, merge, and reconfigure data in a manner that allows enhanced analysis

D) comprehend the process needed to clean and

prepare the data before analysis

23) Which of the following best describes the goal of data quality:

A) recognize what is meant by data quality, be it completeness, reliability or validity

B) perform basic analysis to understand the quality of the underlying data and its ability to address the business question

C) demonstrate ability to sort, rearrange, merge, and

reconfigure data in a manner that allows enhanced analysis

D) comprehend the process needed to clean and prepare the data before analysis

24) Which of the following best describes the goal of data manipulation:

A) recognize what is meant by data quality, be it completeness, reliability or validity

B) perform basic analysis to understand the quality of the underlying data and its ability to address the business question

C) demonstrate ability to sort, rearrange, merge, and

reconfigure data in a manner that allows enhanced analysis

D) comprehend the process needed to clean and prepare the data before analysis

25) Which of the following best describes the goal of data scrubbing and data preparation:

A) recognize what is meant by data quality, be it completeness, reliability or validity

B) perform basic analysis to understand the quality of the underlying data and its ability to address the business question

C) demonstrate ability to sort, rearrange, merge and

reconfigure data in a

manner that allows enhanced analysis

D) comprehend the process needed to clean and prepare the data before analysis

26) Which of the following best describes the goal of developing an analytics mindset:

- A) recognize when and how data analytics can address business questions
- B) perform basic analysis to understand the quality of the underlying data and its ability to address the business question
- C) recognize what is meant by data quality, be it

completeness, reliability or validity

- D) comprehend the process needed to clean and prepare the data before analysis

27) Which of the following best describes the goal of data visualization and data reporting:

- A) recognize when and how data analytics can address business questions
- B) perform basic analysis to understand the quality of the underlying data and its ability to address the business question
- C) recognize what is meant by data quality, be it

completeness, reliability or validity

- D) report results of analysis in an accessible way to each varied decision maker and their specific needs

28) Which of the following best describes the goal of defining and addressing problems through statistical data analysis:

- A) recognize what is meant by data quality, be it completeness, reliability or validity
- B) perform basic analysis to understand the quality of the underlying data and its ability to address the business question
- C) demonstrate ability to sort, rearrange, merge and reconfigure data in a manner that allows enhanced analysis

- D) identify and implement an approach that will use statistical data analysis to draw conclusions and make recommendations on a timely basis

29) While accountants don't need to become data scientists, they must know

- A) Clearly articulate the business problem the company is facing
- B) Communicate with the data scientists about specific data needs and understand the underlying quality of the data
- C) Build a data repository
- D) Comprehend the process needed to clean and prepare the data before analysis

30) Which approach to data analytics attempts to estimate or predict, for each unit, the numerical value of some variable

- A) Similarity matching.
- B) Classification.

using some type of statistical model?

- C) Data reduction.
- D) Regression.

31) Which approach to data analytics attempts to characterize the typical behavior of an individual, group or population by generating summary statistics about the data?

- A) Similarity matching.
- B) Profiling.

- C) Data reduction.
- D) Regression.

32) Which approach to data analytics attempts to reduce the amount of information that needs to be considered to

- A) Similarity matching.
- B) Profiling.

focus on the most critical items?

- C) Data reduction.
- D) Regression.

33) Which of the following best describes the classification approach to data analytics?

- A) An attempt to assign each unit (or individual) in a population into a few categories.
- B) An attempt to identify similar individuals based on data known about them.
- C) An attempt to divide individuals into groups in a

useful or meaningful way.

- D) An attempt to discover associations between individuals based on transactions involving them.

34) Which of the following best describes the clustering

A) An attempt to assign each unit (or individual) in a population into a few categories.

B) An attempt to identify similar individuals based on data known about them.

C) An attempt to divide individuals into groups in a

approach to data analytics?

useful or meaningful way.

D) An attempt to discover associations between individuals based on transactions involving them.

35) Which of the following best describes the similarity matching approach to data analytics?

A) An attempt to assign each unit (or individual) in a population into a few categories.

B) An attempt to identify similar individuals based on data known about them.

C) An attempt to divide individuals into groups in a

useful or meaningful way.

D) An attempt to discover associations between individuals based on transactions involving them.

36) Which of the following best describes the regression approach to data analytics?

A) An attempt to estimate or predict, for each unit, the numerical value of some variable using some type of statistical model.

B) An attempt to predict a relationship between two data items.

C) An attempt to divide individuals into groups in a

useful or meaningful way.

D) An attempt to discover associations between individuals based on transactions involving them.

37) Which of the following best describes the co-occurrence grouping approach to data analytics?

A) An attempt to characterize the typical behavior of an individual, group or population by generating summary statistics about the data.

B) An attempt to predict a relationship between two data items.

C) An attempt to

reduce the amount of information that needs to be considered to focus on the most critical items.

D) An attempt to discover associations between

individuals based on transactions involving them.

38) Which of the following best describes the link prediction approach to data analytics?

A) An attempt to characterize the typical behavior of an individual, group or population by generating summary statistics about the data.

B) An attempt to predict a relationship between two data items.

C) An attempt to reduce the amount of information that needs to be considered to focus on the most critical items.

D) An attempt to discover associations between individuals based on transactions involving them.

39) Which of the following best describes the profiling approach to data analytics?

A) An attempt to characterize the typical behavior of an individual, group or population by generating summary statistics about the data.

B) An attempt to predict a relationship between two data items.

C) An attempt to reduce the amount of information that needs to be considered to focus on the most critical items.

D) An attempt to discover associations between individuals based on transactions involving them.

40) Which of the following best describes the data reduction approach to data analytics?

A) An attempt to characterize the typical behavior of an individual, group or population by generating summary statistics about the data.

B) An attempt to predict a relationship between two data items.

C) An attempt to reduce the amount of information that needs to be considered to focus on the most critical items.

D) An attempt to

discover associations between individuals based on transactions involving them.

41) Which approach to data analytics attempts to discover associations between individuals based on transactions involving them?

- A) Similarity matching.
- B) Clustering.
- C) Co-occurrence grouping.

D) Link prediction.

42) Which approach to data analytics attempts to identify similar individuals based on data known about them?

- A) Similarity matching.
- B) Clustering.
- C) Co-occurrence grouping.

D) Link prediction.

43) Which approach to data analytics attempts to predict a relationship between two data items?

- A) Similarity matching.
- B) Clustering.
- C) Co-occurrence grouping.

D) Link prediction.

44) Which approach to data analytics attempts to divide individuals into groups in a useful or meaningful way?

- A) Similarity matching.
- B) Clustering.
- C) Co-occurrence grouping.

D) Link prediction.

- 45) The IMPACT cycle includes all the following processes *except*:
- A) Identify the questions.
 - B) Address and refine results.
 - C) Track outcomes.
 - D) Predict the results.
- 46) One of the most important aspects of data analytics that impacts tax is:
- A) predictive analytics.
 - B) co-occurrence grouping.
 - C) similarity matching.
 - D) data quality.
- 47) If we are predicting which companies go bankrupt, bankruptcy would be the
- A) dependent variable
 - B) independent variable
 - C) explanatory variable
 - D) classification variable
- 48) If a bank uses credit risk score to determine who will receive a loan, the credit risk score would be considered the:
- A) dependent variable
 - B) independent variable
 - C) response variable
 - D) classification variable
- 49) If a bank uses credit risk score to determine who will receive a loan, the variable predicting who will receive a loan would be considered the:
- A) dependent variable
 - B) independent variable
 - C) determinant

variable

D) classification variable

50) The 3V's of Big Data include all but the following:

- A) volatility
- B) variety
- C) velocity
- D) volume

51) A recent study from McKinsey Global Institute estimates that Data Analytics could generate up to \$3 _____ in value.

- A) billion
- B) trillion
- C) million
- D) thousand

52) The PwC's 6th Annual Digital IQ survey of more than 1,400 leaders from digital business, the area of investment that tops CEOs' list of priorities is _____.

- A) information technology
- B) capital expenditures including hardware and software
- C) accounting data analytics
- D) business analytics

53) According to PwC's 18th Annual Global CEO survey, _____ percent of chief executive officers put a high value on data analytics.

- A) 95
- B) 85
- C) 55
- D) 35

54) According to the text, as the debt-to-income ratio increases, there is _____ chance of a loan getting rejected by the bank.

- A) a greater
- B) a lesser

C) no effect on
the

55) According to the text, as the length of employment increases, there is _____ chance of a loan getting rejected by the bank.

- A) a greater
- B) a lesser

C) no effect on
the

56) According to the text, as the credit score increases, there is _____ chance of a loan getting rejected by the bank.

- A) a greater
- B) a lesser

C) no effect on
the

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

57) List and describe the eight (8) different approaches to data analytics.

58) List and explain four (4) of the seven (7) data analytic skills needed by analytic-minded accountants:

59) As more and more data is available, some would argue that the role of accounting is changing. While accountants don't need to become data scientists, they must develop a base level skill set. Whether they are the Director of Tax for Hewlett Packard or their external auditor, which basic skills

are needed by an analytic-minded accountant?

60) What is the regression approach? How might the regression approach be used in auditing?

61) Assume that you have just started a new job as a credit manager for a Fortune 500 company. Using all steps in the IMPACT Cycle, provide examples of tasks that would be performed as part of each step and state the information/data

you would need to make a decision if a customer is credit worthy.

Answer Key

Test name: ch1

- 1) TRUE
- 2) FALSE
- 3) FALSE
- 4) TRUE
- 5) TRUE
- 6) FALSE
- 7) TRUE
- 8) TRUE
- 9) FALSE
- 10) FALSE
- 11) FALSE
- 12) TRUE
- 13) TRUE
- 14) FALSE
- 15) FALSE
- 16) FALSE
- 17) TRUE
- 18) FALSE
- 19) TRUE
- 20) C
- 21) A

22) B

23) A

24) C

25) D

26) A

27) D

28) D

29) C

30) D

31) B

32) C

33) A

34) C

35) B

36) A

37) D

38) B

39) A

40) C

41) C

42) A

43) D

44) B

45) D

46) A

47) A

48) B

49) A

50) A

51) B

52) D

53) B

54) A

55) B

56) B

57) Answers may vary slightly!

- Classification — An attempt to assign each unit (or individual) in a population into a few categories.

- Regression — An attempt to estimate or predict, for each unit, the numerical value of some variable using some type of statistical model.

- Similarity matching — An attempt to identify similar individuals based on data known about them.

- Clustering — An attempt to divide

individuals (like customers) into groups (or clusters) in a useful or meaningful way.

- Co-occurrence grouping — An attempt to discover associations between individuals based on transactions involving them.
- Profiling — An attempt to characterize the "typical" behavior of an individual, group or population by generating summary statistics about the data (including mean, standard deviations, etc.).
- Link prediction — An attempt to predict a relationship between two data items.

58) Answers will vary but should include some of these items.

- Developing an analytics mindset — recognize when and how data analytics can address business questions.
- Data scrubbing and data preparation — comprehend the process needed to clean and prepare the data before analysis.
- Data quality — recognize what is meant by data quality, be it completeness, reliability or validity.

- Data reduction — A data approach that attempts to reduce the amount of information that needs to be considered to focus on the most critical items (i.e., highest cost, highest risk, largest IMPACT, etc.).

- Descriptive data analysis — perform basic analysis to understand the quality of the underlying data and its ability to address the business question.

- Data analysis through data manipulation — demonstrate ability to sort, rearrange,

merge and reconfigure data in a manner that allows enhanced analysis.

- Defining and addressing problems through statistical data analysis — identify and implement an approach that will use statistical data analysis to draw conclusions and make recommendations on a timely basis.

59) Answers will vary!

- Clearly articulate the business problem the company is facing,
- Communicate with the data scientists about specific data needs and understand the underlying quality of the data.
- Draw appropriate conclusions to the business problem based on the data and make recommendations on a timely basis, and

60) Answers will vary!

Regression is an attempt to estimate or predict, for each unit, the numerical value of some variable using some type of statistical model. Given a balance of total accounts receivable held by a client, auditors can use a

61) Answers will vary! A potential answer

- Data visualization and data reporting — report results of analysis in an accessible way to each varied decision maker and their specific needs.

- Present their results to individual members of management (CEOs, audit managers, etc.) in an accessible manner to each member.

regression analysis to estimate the appropriate level of allowance for doubtful accounts for bad debts.

might include:

Process:	Example or Information need:
Identify the Question	Who is the customer? What is the credit amount requested? What are the terms of payment? How is their financial performance, relative to their competitors?
Master the Data	What is their: • Liquidity ratio, • Effectiveness or turnover ratios, • Financial leverage ratios, • Profitability ratios, • Ratios of debt service.
Perform Test Plan	Possible approaches • Regression • Profiling • Data reduction
Address and Refine Results	• Examine correlations • Request additional data • Discuss with colleagues • Rerun analysis
Communicate Insights	Provide answer (yes/no) to customer. If yes, provide amount of credit limit and payment terms.
Track Outcomes	• Monitor customer aging and payment trends • Revisit as necessary