Student name:\_\_\_\_\_\_\_\_\_\_

**TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.
1)** A lack of marketing analytics skills can leave a company in a situation described as “information rich but data poor.”

 ⊚ true
 ⊚ false

**2)** Between 2004 and 2020, the Google Trends search volume for the term “HR analytics” has been consistently higher than that for the term “marketing analytics.”

 ⊚ true
 ⊚ false

**3)** In the context of determining the correct business problem, asking “What happened?” will help to determine the timeline of the problem.

 ⊚ true
 ⊚ false

**4)** Google Dataset Search is useful in helping data enthusiasts find available data sources.

 ⊚ true
 ⊚ false

**5)** In the context of data measurement types, ratios have no true zero point.

 ⊚ true
 ⊚ false

**6)** Variables are characteristics or features that pertain to a person, place, or object.

 ⊚ true
 ⊚ false

**7)** In supervised learning, the validation dataset is used to “learn” the relationship between the predictors and the target variable.

 ⊚ true
 ⊚ false

**8)** When the target variable is categorical, supervised learning is called prediction.

 ⊚ true
 ⊚ false

**9)** The goal of unsupervised learning is to model the underlying structure and distribution in the data to discover and confirm patterns in the data.

 ⊚ true
 ⊚ false

**10)** In the modeling development step of the 7-step marketing analytics process, the developed algorithm is run on the validation dataset to determine how well it will predict the relevant target variable (dependent variable).

 ⊚ true
 ⊚ false

**MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.
11)** Which of the following businesses would most likely determine demand for its product/service based on the season and the type of technology employed by users?

 A) a medical information website
 B) a food delivery mobile app
 C) a travel services website
 D) a matchmaking app

**12)** Identify a valid difference between descriptive analytics and predictive analytics.

 A) Descriptive analytics can identify patterns in data, whereas predictive analytics can recognize objects from an image.
 B) Descriptive analytics mimics human-like intelligence, whereas predictive analytics identifies the best optimal decision.
 C) Descriptive analytics predicts new needs and opportunities, whereas predictive analysis reinforces existing beneficial practices.
 D) Descriptive analytics uses data to explain the past, whereas predictive analytics uses data to explain the future.

**13)** Which of the following offers the ability to answer the question “What should happen?” in marketing analytics?

 A) text recognition
 B) forecasting
 C) data query
 D) image recognition

**14)** In the context of questions that help identify a business problem, which of the following questions helps to determine the context of the problem?

 A) What is the current problem that needs solving?
 B) What divisions are impacted by this problem?
 C) What do you think continues to drive this problem?
 D) What are the ethical implications of the analysis?

**15)** In the context of questions that help identify a business problem, asking “What factors continue to drive this problem?” will help determine the outcome of the \_\_\_\_\_\_\_\_.

 A) impacted unit
 B) root-cause analysis
 C) timeline
 D) stakeholder

**16)** In the SMART analytics principle, the letter “A” refers to an \_\_\_\_\_\_\_\_ goal-setting technique.

 A) applicable
 B) accurate
 C) attainable
 D) acceptable

**17)** Which of the following is true about the fifth principle in the SMART analytics principles?

 A) The project’s goals should be specific and clearly defined.
 B) The project should be trackable and the outcomes measurable.
 C) The project should solve the analytics problem and align with the business objectives.
 D) The project should be completed in a timely manner.

**18)** Secondary data can be most helpful \_\_\_\_\_\_\_\_.

 A) in formulating ideas about how to ask the right questions
 B) in addressing specific marketing problems
 C) since it does not rely on existing data that has been collected for another purpose
 D) in identifying customers that are unhappy

**19)** Which of the following is most helpful for a business designing a future statistics collection initiative?

 A) root-cause analysis
 B) artificial intelligence
 C) secondary data
 D) machine learning

**20)** Which of the following types of data can be easily accessed and analyzed when using descriptive, predictive, and prescriptive data analytics techniques?

 A) nominal data
 B) structured data
 C) categorical data
 D) unstructured data

**21)** Which of the following types of secondary data includes ZIP code data showing tax return information by state and ZIP code level?

 A) channel partners
 B) mobile data
 C) corporate information
 D) government sources

**22)** The Department of Agriculture is a source of secondary data on \_\_\_\_\_\_\_\_.

 A) fruit and vegetable prices for over 153 commonly consumed products
 B) population, economy, housing, and geography
 C) consumer complaints regarding government’s financial products and services
 D) demographic characteristics such as gender, ethnicity, and citizenship

**23)** A marketing analyst at a gaming company is studying the effect of school holidays on sales of video games. In this study, what type of variable is school holidays?

 A) an outcome variable
 B) a dependent variable
 C) a target variable
 D) an independent variable

**24)** Which of the following statements is true of supervised learning?

 A) In supervised learning, the target variable of interest is known.
 B) Supervised learning has no previously defined target variable.
 C) The goal of supervised learning is to model the underlying structure and distribution in the data.
 D) Supervised learning is used to discover and confirm patterns in the data.

**25)** In supervised learning, the training dataset is used to

 A) assess how well the algorithm developed using the validation dataset estimates the target variable.
 B) build the algorithm and “learn” the relationship between the predictors and the target variable.
 C) select the model that most accurately predicts the target value of interest.
 D) evaluate the final selected algorithm and see how well it performs.

**26)** In supervised learning, which of the following datasets is used for assessing how well an algorithm estimates the target variable?

 A) an independent dataset
 B) a training dataset
 C) an unlabeled dataset
 D) a validation dataset

**27)** In supervised learning, the testing dataset is used to

 A) “learn” the relationship between the predictors and the target variable.
 B) select the model that most accurately predicts the target value of interest.
 C) assess how well the algorithm developed using the training dataset estimates the target variable.
 D) evaluate the final selected algorithm and see how well it performs on a third dataset.

**28)** In the context of modeling types, supervised learning is referred to as prediction when the

 A) historical dataset is continuous.
 B) target variable is continuous.
 C) historical dataset is categorical.
 D) target variable is categorical.

**29)** In the context of modeling types, supervised learning is called classification when

 A) the target variable is continuous.
 B) a testing dataset is used to evaluate the final selected algorithm.
 C) the target variable is categorical.
 D) an unlabeled dataset is used to develop an algorithm.

**30)** Shop-o-maniac, an e-commerce website, is experiencing low website traffic. Based on the 7-step marketing analytics process, what should be the first step taken by the firm to develop a plan to increase its website traffic?

 A) model development
 B) data understanding and collection
 C) business problem understanding
 D) data preparation and feature selection

**31)** In which step of the 7-step marketing analytics process are the unit of analysis and the target and predictor variables identified?

 A) model development
 B) data preparation and feature selection
 C) model evaluation and interpretation
 D) data understanding and collection

**32)** In the second step of the 7-step marketing analytics process, a marketing analyst should

 A) identify where the data is stored.
 B) question whether the problem the business is presenting is, in fact, the correct problem.
 C) identify the target and predictor variables.
 D) select the method to use based on the target variable and problem.

**33)** In the context of the 7-step marketing analytics process, which of the following steps should be followed after completing model evaluation and interpretation?

 A) model deployment
 B) data preparation and feature selection
 C) model and results communication
 D) business problem understanding

**34)** Which step of the 7-step marketing analytics process typically involves other key stakeholders such as information technology specialists, customer service representatives, or the sales team of an organization?

 A) model deployment
 B) model and results communication
 C) model development
 D) data preparation and feature selection

**35)** According to the survey by KDnuggets, which of the following is the top software used by companies for marketing analytics?

 A) Python
 B) Tableau
 C) Apache Spark
 D) scikit-learn

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.
36)** In the context of defining the right business problem, list the questions that need to be asked to determine context.

**37)** List and describe four sources of secondary data.

**38)** In the context of variable types in data measurement, explain the difference between numerical and categorical variables.

**39)** Discuss how a business can use supervised and unsupervised learning together to gain more insights about a problem it is facing.

**40)** Discuss the importance of knowledge of marketing analytics when an individual is searching for a job.

**Answer Key**Test name: chapter 1

1) FALSE

2) FALSE

3) FALSE

4) TRUE

5) FALSE

6) TRUE

7) FALSE

8) FALSE

9) TRUE

10) FALSE

11) C

12) D

13) B

14) A

15) B

16) C

17) D

18) A

19) C

20) B

21) D

22) A

23) D

24) A

25) B

26) D

27) D

28) B

29) C

30) C

31) B

32) A

33) C

34) A

35) A

36)Answers will vary. The answer should include the following points:
 Exhibit 1-3

37)Answers will vary. The answer should include the following points:
● Public datasets
● Online sites
● Mobile data
● Channel partners
● Commercial brokers
● Corporate information

38)Answers will vary. The answer should include the following points:
● Data Measurement

39)Answers will vary. The answer should include the following points:
● Unsupervised learning

40)Answers will vary. The answer should include the following points:
● 1.8 Setting Yourself Apart