Test Bank for Business Statistics CDN 3rd Sharpe

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***Business Statistics, Cdn. Ed., 3e* (Sharpe)**
Chapter 2: Data

Short Answer - Quiz A

1) The mission of a research firm is to "explore the impact of the Internet on families, communities, work, home, and daily life." In August - September 2015 they conducted telephone interviews with a sample of Canadian adults aged 18 and older about online shopping. Describe the W's for the information given.

- Who:
- What:
- When:
- Where:
- How:
- Why:

Answer:

- Who: Canadian adults aged 18 and older
- What: online shopping
- When: August - September 2015
- Where: Canada
- How: telephone interviews
- Why: to explore the impact of the Internet on daily life, specifically online shopping

L.O.: 1

2) The following table displays some of the data collected by the above research firm in their study of online shopping. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is quantitative, give the units.

Age	*Gender*	*Household Income*	*Participated in online auction?*	*Monthly amount spent online*	*Time (hours) per week browsing online retailers*
25	Male	$55,000	Yes	$250	6
47	Female	$60,000	No	$50	4
38	Female	$110,000	No	$120	10
30	Male	$62,000	No	$75	4

Answer: Categorical: Gender, Participated in online auction?
Quantitative: Age (years), Household Income ($), Monthly amount spent online ($), Time per week browsing online retailers (hours).
L.O.: 2

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3) In addition to the variables listed above, data were also collected on the variables listed below. Indicate whether each is nominal or ordinal.

- *Region* (Urban, Suburban, Rural)
- *Education* (Less than High School, High School, College, University)
- *Marital Status* (Single, Widowed, Divorced, Married)

Answer:

- *Region* (Urban, Suburban, Rural)
  Nominal
- *Education* (Less than High School, High School, College, University)
  Ordinal
- *Marital Status* (Single, Widowed, Divorced, Married)
  Nominal

L.O.: 2

4) For each of the following, indicate whether the data are cross-sectional or time series:

- *Weekly receipts at a clothing boutique*
- *Monthly demand for an automotive part*
- *Percentage of adults who bank online*

Answer:

- *Weekly receipts at a clothing boutique*
  Time Series
- *Monthly demand for an automotive part*
  Time Series
- *Percentage of adults who bank online*
  Cross-Sectional

L.O.: 2

5) Eastland College instructors and students are asking to review a new computer tutorial. Peter, author of the tutorial, wants to analyze the feedback. He gets a spreadsheet. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is categorical, indicate whether it is nominal or ordinal. Does the table contain an identifier variable?

Name	*Status*	*Tutorial Access ID*	*Level of satisfaction*	*Number of visits per week*	*Time (minutes) spent per week*
Ann	Instructor	AB235	Moderately helpful	3	60
Boris	Student	BC1090	Very helpful	4	120
Parul	Student	PR1841	Not helpful	1	30
Paul	Instructor	PG145	Somewhat helpful	2	45

Answer: Quantitative: Number of visits per week, Time spent per week (minutes)
Categorical: Name (nominal), Status (nominal), Tutorial Access ID (nominal, identifier), Level of satisfaction (ordinal).
L.O.: 2

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Short Answer - Quiz B

1) *Consumer Reports Health* routinely compares drugs in terms of effectiveness and safety. Suppose that in the summer of 2014 they reviewed drugs used to treat arthritis. Information was reported on convenience of use (how many pills required each day), possible side effects (e.g., dizziness, stomach upset), cost, and ratings of effectiveness in relieving symptoms (very effective, somewhat effective, not effective). Describe the W's for the information given.

- Who:
- What:
- When:
- Where:
- How:
- Why:

Answer:

- Who: drugs to treat arthritis currently on the market
- What: convenience of use, side effects, cost, effectiveness ratings
- When: summer 2014
- Where: not specified
- How: testing on drugs
- Why: to compare arthritis drugs it terms of effectiveness and safety

L.O.: 1

2) List the variables reported in the *Consumer Reports Health* article on drugs used to treat arthritis. If the variable is quantitative, give the units. If the variable is categorical, indicate whether it is nominal or ordinal.

Answer: Categorical: Side effect (nominal), Effectiveness Rating (ordinal)
Quantitative: Convenience of use (number of pills), Cost ($)
L.O.: 2

3) The Human Resources Department of a large corporation maintains records on its employees. The table displays some of these data. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is quantitative, give the units. If the variable is categorical, indicate whether it is nominal or ordinal.

Age	*Employment Category*	*Education*	*Participates in Wellness Program?*	*Paycheck Benefit Deductions*
32	Clerical	High School	Yes	$250
52	Professional	College	No	$120
60	Professional	University	Yes	$0
28	Clerical	High School	No	$120

Answer: Categorical: Employment Category (nominal), Education (ordinal), Participates in Wellness Program? (nominal)
Quantitative: Age (years), Paycheck Benefit Deductions ($)
L.O.: 2

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4) For each of the following, indicate whether the data are cross-sectional or time series:
- *Company quarterly profits*
- *Percentage of Canadian adults who work full time*
- *Historical closing stock prices*

Answer:
- *Company quarterly profits*
  Time Series
- *Percentage of Canadian adults who work full time*
  Cross-Sectional
- *Historical closing stock prices*
  Time Series

L.O.: 2

Multiple Choice - Quiz C

1) In the fall of 2015 a research company conducted its *Internet & Life Project* through telephone interviews about online shopping with a sample of Canadian adults aged 18 and older. Canadian adults aged 18 and older constitute the _____ of the study.
A) Who
B) What
C) When
D) Where
E) How
Answer: A
L.O.: 1

2) A few of the variables for which data were collected in the *Internet & Life Project* study include age, gender, income, monthly Internet bill, and number of hours spent shopping online per month. Which of the variables is categorical?
A) Age
B) Gender
C) Income
D) Number of hours spent shopping online
E) Monthly Internet bill
Answer: B
L.O.: 2

3) The *Internet & Life Project* study also asked respondents to indicate their education level on the following scale: *Less than High School, High School, Some College, College, University.* Which of the following statements is true?
A) Education level is a time series variable.
B) Education level is nominal scaled.
C) Education level is a quantitative variable.
D) Education level is a categorical (ordinal) variable.
E) Education level is a nominal variable.
Answer: D
L.O.: 2

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4) *Consumer Reports Health* routinely compares drugs in terms of effectiveness and safety. In summer 2014 they reviewed drugs used to treat arthritis. Among the information reported was convenience of use (how many pills required each day) and possible side effects (e.g., dizziness, stomach upset). Convenience of use and possible side effects constitute the _____ of the study.
A) Who
B) What
C) When
D) Where
E) How
Answer: B
L.O.: 1

5) What is the "Who" in the *Consumer Reports Health* study on the effectiveness and safety of drugs used to treat arthritis?
A) drugs to treat arthritis
B) convenience of use and possible side effects
C) summer 2014
D) Canada
E) testing on drugs
Answer: A
L.O.: 1

6) In the *Consumer Reports Health* study on arthritis drugs, possible side effects is what kind of variable?
A) Quantitative
B) Ordinal
C) Identifier
D) Time series
E) Categorical (nominal)
Answer: E
L.O.: 2

7) The *Consumer Reports Health* study on arthritis drugs also took into consideration cost. Cost is
A) a nominal variable.
B) a categorical variable.
C) a quantitative variable.
D) an ordinal variable.
E) an irrelevant variable.
Answer: C
L.O.: 2

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8) The Human Resources Department of a large corporation maintains records on its employees. Data are maintained for the following variables: *Age, Employment Category, Education, Whether or not the employee participates in a wellness program, and Paycheck benefit deductions.* Which of these variables are categorical?
A) *Age* and *Paycheck benefit deductions*
B) *Employment Category, Education*, and *Whether or not the employee participates in a wellness program*
C) *Paycheck benefit deductions* only
D) *Age* only
E) *Education* only
Answer: B
L.O.: 2

9) Which of the following is based on cross-sectional data?
A) Company quarterly profits
B) Percentage of Canadian adults who work full time
C) Historical closing stock prices
D) Yearly student enrollments
E) Annual costs
Answer: B
L.O.: 2

10) Which of the following is time series data?
A) Number of employees in 2013
B) This month's demand for an automotive part
C) This quarter's sales of automobiles
D) Weekly receipts at a clothing boutique
E) Percentage of employees who are female
Answer: D
L.O.: 2

11) A company conducted a survey of its employees to determine their level of satisfaction with various company policies. The data collected from this survey are
A) primary data.
B) secondary data.
C) transactional data.
D) census data.
E) quantitative data.
Answer: A
L.O.: 2

12) Bell Canada tracks employee turnover annually. It currently has a data set that contains turnover for the past 20 years. What type of data does it have?
A) time series data
B) cross-sectional data
C) nominal data
D) ordinal data
E) categorical data
Answer: A
L.O.: 2

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13) The human resources department at a major high tech company recently conducted an employee satisfaction survey of 100 of its 3,000 employees. Data were collected on such variables as age, gender, marital status, current salary, level of overall satisfaction on a scale from 1 to 5, number of years with the company, and job title. Which of the following best describes the overall data set that was generated from the study?
A) cross-sectional data
B) time series data
C) nominal data
D) quantitative data
E) categorical data
Answer: A
L.O.: 2

14) The human resources department at Bell Canada recently conducted an employee satisfaction survey of 100 of its employees. Data were collected on such variables as age, gender, marital status, current salary, level of overall satisfaction on a scale from 1 to 5, number of years with the company, and job title. Which of the variables would be classified as nominal data?
A) gender, marital status, and job title
B) age and gender
C) age and number of years with the company
D) age
E) level of overall satisfaction
Answer: A
L.O.: 2

15) The human resources department at Bell Canada recently conducted an employee satisfaction survey of 100 of its employees. Data were collected on such variables as age, gender, marital status, current salary, level of overall satisfaction on a scale from 1 to 5, number of years with the company, and job title. Which of the variables would be considered to be quantitative data?
A) age, number of years with the company, and current salary
B) gender and current salary
C) age and gender
D) marital status and current salary
E) level of overall satisfaction on a scale from 1 to 5, number of years with the company, and job title
Answer: A
L.O.: 2

16) Tim Hortons conducts a random survey of 1000 customers in their Ottawa outlets on a particular day. For each customer they collect data on the time taken to fill the order, how frequently the customer comes to Tim Hortons in a week, whether the customer purchased only coffee or additional item(s), and the level of overall satisfaction using a scale from 1 to 5. What is the "Who" of this study?
A) the 1000 customers
B) the time taken to fill the customer order
C) whether the customer purchased only coffee or additional item(s)
D) the level of overall satisfaction
E) how frequently the customer comes to Tim Hortons in a week
Answer: A
L.O.: 1

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17) Tim Hortons conducts a random survey of 1000 customers in their Ottawa outlets on a particular day. For each customer they collect data on the time taken to fill the order, how frequently the customer comes to Tim Hortons in a week, and the level of overall satisfaction using a scale from 1 to 5.
Time taken to fill the order, how frequently the customer comes to Tim Hortons in a week, and the level of satisfaction constitute the _____ of the study.
A) How
B) Who
C) What
D) When
E) Where
Answer: C
L.O.: 1

18) Tim Hortons conducts a random survey of 1000 customers in their Ottawa outlets on a particular day. For each customer they collect data on the time taken to fill the order, how frequently the customer comes to Tim Hortons in a week, whether the customer purchased only coffee or additional item(s), and the level of overall satisfaction using a scale from 1 to 5. Which of the variables is quantitative?
A) the time taken to fill the order, and how frequently the customer comes to Tim Hortons in a week
B) whether the customer purchased only coffee or additional item(s)
C) the level of overall satisfaction
D) whether the customer purchased only coffee or additional item(s) and the level of overall satisfaction
E) the level of overall satisfaction and how frequently the customer comes to Tim Hortons in a week
Answer: A
L.O.: 2

19) When a survey uses the responses strongly disagree, disagree, neutral, agree, strongly agree, what type of data are collected?
A) ordinal data
B) nominal data
C) cross-sectional data
D) time series data
E) quantitative data
Answer: A
L.O.: 2

20) Which of the following is a secondary data source?
A) using Statistics Canada data
B) conducting a telephone survey
C) conducting a mail out written survey
D) conducting personal interviews
E) conducting an experiment
Answer: A
L.O.: 2

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21) Vitamin D insufficiency is associated with many diseases including multiple sclerosis, breast and other cancers, bone diseases, tuberculosis. A variable which represents the vitamin D level (ng/ml) of a hospital patient is
A) a categorical variable.
B) a quantitative variable.
C) a nominal variable.
D) an ordinal variable.
E) an identifier variable.
Answer: B
L.O.: 2

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