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BigData$ IoT

Grades

Started on	Tuesday, 6 June 2023, 1:35 PM
State	Finished
Completed on	Tuesday, 6 June 2023, 1:45 PM
Time taken	9 mins 33 secs
Marks	32.00/36.00
Grade	**88.89** out of 100.00

Messages

Calendar

Question **1**

Correct

Mark 2.00 out of 2.00

What two aspects of modern data analytics enhance data-driven decision making compared with traditional data analysis methods? (Choose two.)

Select one or more:

✓ real-time incoming data ✔

well-defined data structures

✓ data from multiple sources ✔

data stored in a central data warehouse

predominant use of descriptive analytical tools

Refer to curriculum topic: 2.2.3
Traditional analytics use descriptive analytical tools and they rely on structured data stored in a single data warehouse. This type of analysis only uses historical data. However, modern analytics takes advantage of both structured and unstructured data collected in real-time from multiple data sources to enable businesses to make decisions quickly in response to situation changes.

The correct answers are: real-time incoming data, data from multiple sources

Question **2**

Correct

Mark 2.00 out of 2.00

Which statement is true concerning data analytics?

Select one:

○ Prescriptive analytics uses historical data to provide regular reports on events that have already happened.

○ Predictive analytics uses simulation models and forecasting to suggest what could happen. ✔

○ Descriptive analytics uses a feedback system to track the outcome of actions taken.

○ Descriptive analytics attempts to predict what will happen next.

Refer to curriculum topic: 2.2.2
Descriptive analytics uses historical data to provide regular reports on events that have already happened. Prescriptive analytics uses a feedback system to track the outcome of actions taken. Predictive analytics uses data and statistical techniques to predict future trends. All three types of analytics (Prescriptive, Predictive, and Descriptive) are used in Big Data analysis.

The correct answer is: Predictive analytics uses simulation models and forecasting to suggest what could happen.

Question **3**

Correct

Mark 2.00 out of 2.00

A college has deployed next-generation analytics. Which question would most likely be answered by next generation analytics that could not be answered by traditional analysis tools?

Select one:

○ Which class has the most sections available?

○ What are the 10 most expensive textbooks required in any class?

○ Which 100 classes fill the fastest once open enrollment is available for the general population?

○ Which teacher had the highest number of students enrolled in classes during the last year?

○ Which class sections do students consider the most in the online environment without actually enrolling?   ✔

Refer to curriculum topic: 2.2.3
Structured data would be able to answer questions related to how many sections, textbook prices, or enrollment statistics such as courses that fill the quickest or the most number of students. Next generation analytics takes data analysis a step forward in analyzing browsing habits and predictive analytics based on prior data and current data in real time.

The correct answer is: Which class sections do students consider the most in the online environment without actually enrolling?

Question **4**

Correct

Mark 2.00 out of 2.00

Which task is performed within the data analysis step of the Data Analysis Lifecycle?

Select one:

○ testing the model on data to ensure reliability   ✔

○ incorporating the findings into corporate strategy

○ selecting a tool for data analysis

○ locating and gathering data

Refer to curriculum topic: 2.2.4
Testing the reliability of the model is performed in the data analysis step of the Data Analysis Lifecycle.

The correct answer is: testing the model on data to ensure reliability

Question **5**

Correct

Mark 2.00 out of 2.00

A college uses a learning management system (LMS) to host lecture materials and provide access to assignments and assessments. A teacher uses the LMS to check activities completed by students in a particular course. Which data analytics method is being used?

Select one:

○ indicative

○ predictive

◉ descriptive   ✔

○ prescriptive

○ proactive

Refer to curriculum topic: 2.2.2

Data analytics, applied to Big Data, can be classified in three major types:

- **Descriptive** - provides information about the past state or performance of a person or an organization
- **Predictive** - attempts to predict the future, based on data and analysis, or what will happen next
- **Prescriptive** - predicts outcomes and suggests courses of actions that will hold the greatest benefit to an organization

In this case, the teacher uses the existing data to check the progress of students.

The correct answer is: descriptive

Question **6**

Correct

Mark 2.00 out of 2.00

Which two tasks may be performed as part of the data transformation process? (Choose two.)

Select one or more:

✓ sorting the data   ✔

✓ applying validation rules to the data   ✔

   transferring the data into a database

   collecting and recording the data

   communicating results to decision-makers

Refer to curriculum topic: 2.3.2

The process of transforming the data includes tasks such as these:

- Joining data from several sources
- Aggregating data
- Sorting data
- Determining new values calculated from aggregated data
- Applying validation rules

The correct answers are: sorting the data, applying validation rules to the data

Question **7**

Incorrect

Mark 0.00 out of 2.00

What is an example of data in the DIKW Pyramid model?

Select one:

○ data structured in a format that can be analyzed ✖

○ the application of knowledge

○ information that is understood and can be used immediately

○ facts gathered through observation

Refer to curriculum topic: 2.2.1
The DIKW Pyramid model is used to describe the relationship between data, information, knowledge, and wisdom. The following is an explanation of each level of the pyramid (from top to bottom):
·   Wisdom is the understanding of how to apply knowledge.
·   Knowledge is information that is understood and can now be used to make decisions.
·   Information is data that has been structured in a way that it is useful for analysis.
·   Data consists of facts from some type of observation or measurement.

The correct answer is: facts gathered through observation

Question **8**

Correct

Mark 2.00 out of 2.00

Place the six steps in the data analysis lifecyle in the correct order.

Gather the data.	Step 1	✔
Prepare the data.	Step 2	✔
Choose a model.	Step 3	✔
Analyze the data.	Step 4	✔
Present results.	Step 5	✔
Make decisions.	Step 6	✔

Refer to curriculum topic: 2.2.4
The six steps of the data analysis lifecycle are:

Step 1 - Gather the data.
Step 2 - Prepare the data.
Step 3 - Choose a model.
Step 4 - Analyze the data.
Step 5 - Present the results.
Step 6 - Make decisions.

State a hypothesis is not one of the six steps in the data analysis lifecycle, rather it is the second step in the scientific method.

The correct answer is: Gather the data. → Step 1, Prepare the data. → Step 2, Choose a model. → Step 3, Analyze the data. → Step 4, Present results. → Step 5, Make decisions. → Step 6

Question **9**

Incorrect

Mark 0.00 out of 2.00

A large online ordering company collects the sales history of its customers. Using this historical data, the online company sends customized sales advertisements to a specific group of customers. Which data analytics method is being used?

Select one:

○ indicative

◉ predictive   ✖

○ descriptive

○ prescriptive

Refer to curriculum topic: 2.2.2

Data analytics, applied to Big Data, can be classified into three major types:

- **Descriptive** - provides information about the past state or performance of a person or an organization
- **Predictive** - attempts to predict the future, based on data and analysis, or what will happen next
- **Prescriptive** - predicts outcomes and suggests courses of actions that will hold the greatest benefit to an organization

In this case, the company predicts the customers who are more likely to purchase similar products, and sends those customers the targeted sales advertisements.

The correct answer is: prescriptive

Question **10**

Correct

Mark 2.00 out of 2.00

Which data trend has seen decision making rely increasingly on data analytics?

Select one:

◉ the increase in the amount of data   ✔

○ the security constraints of data

○ the lack of information about data

○ the accuracy of decision making

Refer to curriculum topic: 2.2.1

The amounts of data collected and stored are increasing exponentially and require the application of data analytics to extract the required information.

The correct answer is: the increase in the amount of data

Question **11**

Correct

Mark 2.00 out of 2.00

In a data analysis project, which process gathers all grades for students enrolled in a college course?

Select one:

○ action

◉ extract   ✔

○ load

○ transform

Refer to curriculum topic: 2.3.2
There are three processes in data preparation:

- Extract - The process of gathering the data to be analyzed.
- Transform - The process of conditioning data into a usable form.
- Load - The process of transferring data to a database.
 Action is the application of knowledge, but it is not one of the processes used in data preparation.

The correct answer is: extract

Question **12**

Correct

Mark 2.00 out of 2.00

In what step of the Data Analysis Lifecycle are tools selected for performing data analysis?

Select one:

◉ choosing a model   ✔

○ gathering data

○ presenting the data

○ preparing the data

Refer to curriculum topic: 2.2.4
There are six steps in the Data Analysis Lifecycle:

1. Gathering the data
2. Preparing the data
3. Choosing the model
4. Analyzing the data
5. Presenting the data
6. Making decisions

Of these six steps, the selection of tools for data analysis is performed in step 3, choosing the model.

The correct answer is: choosing a model

Question **13**

Correct

Mark 2.00 out of 2.00

What is true about Big Data and personal privacy?

Select one:

○ Privacy issues are not a major concern of Big Data.

○ Ethical issues about the use of Big Data are treated the same way around the world.

○ Most data scientists think that consumers will not have to worry about privacy issues because privacy is the responsibility of government.

○ According to data scientists, the construction of an ethical framework would help the collection and use of Big Data.   ✓

Refer to curriculum topic: 2.4.1
The response from governments around strict regulations on the use of Big Data varies from country to country. A survey of 865 data scientists about ethical issues around the use of Big Data found 88% believed that consumers should worry about privacy issues and 80% agreed that there should be an ethical framework in place for collecting and using data.

The correct answer is: According to data scientists, the construction of an ethical framework would help the collection and use of Big Data.

Question **14**

Correct

Mark 2.00 out of 2.00

An analyst is asked to review gathered data and modify any incompatible metric used by various sources of data. Which step in ETL does this represent?

Select one:

○ action

○ extract

○ load

○ transform   ✓

Refer to curriculum topic: 2.3.2
There are three processes in data preparation:

- Extract - the process of gathering the data to be analyzed
- Transform - the process of aggregating data and modifying it into a usable form
- Load - the process of transferring data to a database

The correct answer is: transform

Question **15**

Correct

Mark 2.00 out of 2.00

What was the main purpose of the "Discover Your Internet Footprint" activity?

Select one:

○ to show that only public information about a person can be found

○ to show that different types of information can be found about a person   ✓

○ to show that only authorized government workers can find information about a person

○ to show that any information about a person can be found, but only if a person gives an authorization to do so

Refer to curriculum topic: 2.4.1
A lot of information can be found on the Internet about people. Much of this information can be private, sensitive, or even incriminating. Personal information ranging from where a person has lived, government records, and credit history can be easily discovered for free, or for a price.

The correct answer is: to show that different types of information can be found about a person

Question **16**

Correct

Mark 2.00 out of 2.00

In the DIKW (data, information, knowledge, and wisdom) model, what is the definition of knowledge?

Select one:

○ Knowledge is unstructured data.

◉ Knowledge is information that is understood and can be used to make decisions. ✔

○ Knowledge is data that is structured in a useful way.

○ Knowledge is the understanding of how to apply data.

Refer to curriculum topic: 2.2.1
Knowledge is information that is understood and can be used to make decisions. Information is data that has been structured in a way that it is useful. Wisdom is the understanding of how to apply knowledge. Data is common raw values taken from measurements.

The correct answer is: Knowledge is information that is understood and can be used to make decisions.

Question **17**

Correct

Mark 2.00 out of 2.00

In what way is the Data Analysis Lifecycle similar to using the scientific method?

Select one:

◉ They both begin with a question. ✔

○ They both use the same process steps.

○ They both lead to the same results.

○ They both require a scientist to solve a problem.

Refer to curriculum topic: 2.2.4
The Data Analysis Lifecycle is a process that is similar to the process used in the scientific method. Both begin with a question that needs to be solved.

The correct answer is: They both begin with a question.

Question **18**

Correct

Mark 2.00 out of 2.00

What is a characteristic of the six-step Data Analysis Lifecycle methodology?

Select one:

◉ Each step includes many tasks that must be completed before moving on to the next step. ✔

○ It is the only methodology available for data analysis.

○ It was designed exclusively for use in a scientific environment.

○ The analysis process is very straightforward, so there are no iterations with previous steps.

Refer to curriculum topic: 2.1.1
There are many methodologies for conducting data analysis. The six-step Data Analysis Lifecycle methodology is designed for use in a business environment. The lifecycle may require many iterations between some steps before decision-makers are confident enough to move forward. Each step in the lifecycle includes many tasks that must be completed before moving on to the next step.

The correct answer is: Each step includes many tasks that must be completed before moving on to the next step.

◄ Chapter 2 Terms and Concepts Practice

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