Q1) Choose ONE correct answer from each of the following MCQs.

1. All of the following statements about metadata are true EXCEPT _____
   a. metadata gives context to reported data
   b. there may be ethical issues involved in the creation of metadata
   c. metadata helps to describe the meaning and structure of data
   d. for most organizations, data warehouse metadata are an unnecessary expense

2. _____ help managers understand probable future outcomes
   a. Dashboards
   b. Descriptive analytics
   c. Predictive analytics
   d. Prescriptive analytics

3. In decision making, the main outcome of intelligence phase is _____
   a. A formal problem statement
   b. Alternatives
   c. A Formulated model
   d. Criteria for choice

4. Which kind of data warehouse is created separately from the enterprise data warehouse by a department and not reliant on it for updates?
   a. sectional data mart
   b. independent data mart
   c. public data mart
   d. volatile data mart

5. One of the common data mining blunders is selecting the _____ problem for data mining.
   a. correct
   b. right
   c. wrong
   d. All of above

6. Which user interface is an effective DSS GUI, as it is user friendly and familiar, and a gateway to nearly all sources of essential information and data?
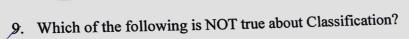
   a. ASP.net
   b. Web browsers
   c. visual basic
   d. mainframe interfaces

7. Selecting the best solution from two or more alternatives is called _____.

   a. Management
   b. Decision making
   c. Analysis
   d. None of the above

8. Which of the following is a major component of BI system?

   a. Data warehouse
   b. Business analytics
   c. User interface   ← or ⓒ
   d. All the above

9. Which of the following is NOT true about Classification?

   a. It employs supervised learning
   b. It learns from past data, classify new data
   c. It is a part of machine-learning family
   d. The output variable is numerical in nature

10. Artificial Neural Network (ANN) has which of the following layer(s)?

    a. Hidden layer
    b. Input layer
    c. Output layer
    d. All of the above

11. What is the fundamental challenge of dashboard design?

    a. ensuring that users across the organization have access to it
    b. ensuring that the organization has the appropriate hardware onsite to support
    c. ensuring that the organization has access to the latest web browsers
    d. ensuring that the required information is shown clearly on a single screen

12. Data warehouse administrator should _____
    a. have the knowledge of high-performance software, hardware and networking technologies
    b. possess solid business knowledge and insight
    c. possess excellent communications skills
    d. All of the above

13. ETL means _____
    a. Enterprise, Transform Load
    b. Extract, Transform Load
    c. Enterprise, Transcript Load
    d. Extract, Transcript Load

14. The following are the layers of information in dashboard:
    a. Monitoring and analysis
    b. Monitoring and management
    c. Analysis and management
    d. Monitoring, analysis and management

15. The purpose of a Business Report is to _____
    a. Improve managerial decisions
    b. Increase the business profit.
    c. Enhance the project management
    d. Create a good system.

[15 Marks]

14

Q2) For each question, circle True (T) or False (F) as appropriate.

1.	The design phase of decision making is where the decision maker examines reality and identifies and defines the problem.	T	**F**
2.	In *k*-Nearest Neighbor (KNN) method, the output does not depend on the value of k.	T	**F**
3.	In an operational data base, the data is more recent than the data in the data warehouse.	**T**	F
4.	Descriptive analytics help managers make decisions to achieve the best performance in the future.	**T**	**F**
5.	Data is a collection of facts usually obtained as the result of experiences, observations, or experiments.	**T**	**F**
6.	Balanced Scorecard (BSC) is a Performance Measurement System.	**T**	F
7.	Architecture of a neural network is driven by the task it is intended to address.	**T**	F
8.	Information is the aggregation, summarization, and contextualization of data.	**T**	F
9.	Data warehouses are subsets of data marts.	T	**F**
10.	Risk cannot be measured with probability.	**T**	**F**

[10 Marks]

Q3) Fill-in each blank with the most suitable word from the table.

keyboard	User Interface ①	paragraph	requirements	Kernel functions
Problem ⑤	database	implementation ②	Report ③	ANNs

1. The user communicates with and commands the DSS through the __Interface user__ __Interface__ subsystem.

2. The __implementation__ phase involves putting a recommended solution to work.

3. __Report__ is any communication artifact prepared to convey specific information

4. Support Vector Machine (SVM) uses nonlinear __kernel functions__ to transform non-linear relationships among the variables into linearly separable feature spaces.

5. __Problem__ is the difference between what people desire (or expect) and what is actually occurring.

[5 Marks]

Q4) Answer the following questions briefly.

a) What are Performance Dashboards? Briefly explain.

Performance dashboards are commonly used in BPM software suites and BI platforms

Dashboards provide visual displays of important information that is consolidated and arranged on a single screen so that information can be digested at a single glance and easily drilled in and further explored

[4 Marks]

b) Give four examples of potential issues in data/information collection and estimation.

1- Lack of data
2- Cost of data collection
3- Inaccurate and/or imprecise data
4- Data estimation is often subjective
5- Data may be insecure
6- Key data may be qualitative
7- Data change over time (time-dependence)

[4 Marks]

c) Managers usually make decisions by following four steps (a.k.a. the scientific approach) what are they?

1- Define the problem (or opportunity)
2- Construct a model that describes the real-world problem.
3- Identify possible solutions to the modeled problem and evaluate the solutions.
4- Compare, choose, and recommend a potential solution to the problem.

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cm making

[4 Marks]

Q5) Name at least four characteristics of data warehousing and explain any <u>two</u> of them.

1- Subject oriented: Data are organized by detailed subject, such as sales, products, or customers, containing only information relevant for decision support

2- Integrated: Data warehouses must place data from different sources into a consistent format.

3- Time-variant (time series)
4- Nonvolatile
5- Summarized
6- Not normalized
7- Metadata
…

[8 Marks]

End of Examination… G☺☺d Luck!