

Total No. of Printed Pages:2

**B.Sc. Course (CBCS) Ordinance Sem-V
EXAMINATION OCTOBER 2019
Computer Science - Data Mining**

[Duration : Two Hours]

[Total Marks :60]

Instructions:

- i) Questions 1-6 are compulsory. Marks are indicated on RHS of each question.
- ii) Use of calculators is allowed.

Q.1

Answer any 5 :

(5x2=10)

- a) Differentiate between Flat Files and Relational Databases.
- b) Compare the data warehousing schemas: Star, Snow Flake.
- c) What is meant by Normalising a dataset?
- d) What is the definition of a data warehouse? List the features of a data warehouse.
- e) What are Multimedia databases?
- f) Briefly explain the usage of statistics in data mining.
- g) What is meant by Outlier Detection? Briefly explain with an example.

Q.2

Answer any 5 :

(5x2=10)

- a) Differentiate between classification and prediction techniques.
- b) Differentiate between clustering and classification in machine learning.
- c) What is Market Basket Analysis?
- d) Differentiate between the Agglomerative and Divisive approach of Clustering.
- e) What is temporal data mining?
- f) What is Spatial data Mining?
- g) What are the uses of text mining?

Q.3a.

State and explain major classes of tasks in data mining.

(5)

OR

Q.3a.

Explain Data Cleaning. Why is data cleaning a big job during data pre-processing?

(5)

Q.3b.

What are attributes of datasets? State and explain the different types of attributes.

(5)

Q.4a.

Explain the fact constellation schema with the help of a suitable example.

(5)

OR

Q.4a.

Explain the steps in the KDD process.

(5)

Q.4b.

Explain the architecture of a typical data mining system?

(5)

Q.5a.

What is Multilevel, Multidimensional association mining?

(5)

OR

Q.5a.

Explain the Metrics for evaluating Classifier performance.

(5)

Q.5b.

Using Apriori algorithm

(5)

- i). Generate 2-item frequent sets for the following transaction database. (Minimum support is 40%)
- ii). Consider the rule $2 \rightarrow 5$, Calculate its confidence.

Trans_id	Item List
T1	{1,2,3,4}
T2	{2,3,5}
T3	{1,2,3,5}
T4	{2,5}

- Q.6a. Explain the Requirements of Clustering Algorithms (5)
- OR**
- Q.6a. Explain the Density based methods for clustering (5)
- Q.6b. Define Web Mining. Explain the Web Mining categories. (5)

Total No. of Printed Pages:2

**B.Sc. Course (CBCS) Ordinance (Semester-V)
EXAMINATION October 2019
Computer Science: Computer Networks**

[Duration : Two Hours]

[Max. Marks :80]

Instructions:-

- 1) All questions are **compulsory**.
- 2) Figures to the **right** indicate **full** marks.
- 3) **Use** of calculators **allowed**.

1. Answer **any four** of the following: (4x4=16)
 - a) What do you mean by network? Explain three important network criteria's.
 - b) Write a note on LAN.
 - c) What is CSMA? Explain p-persistent method utilized by station when the channel is busy/ idle.
 - d) Explain in brief flooding and selective flooding algorithm.
 - e) Draw UDP header and explain its fields.
 - f) Explain the following resource record types w.r.t. DNS
 - 1) SOA
 - 2) A
 - 3) PTR
 - 4) MX.

2. Answer **any four** of the following: (4x4=16)
 - a) Explain Ring Topology with its advantages and disadvantages.
 - b) Draw Manchester and Differential Manchester waveform for data bits 10000101111.
 - c) Write a note router device?
 - d) Explain briefly 10Base2 (thin Ethernet) implementation for Standard Ethernets.
 - e) Write any four advantages of fiber cable as transmission media.
 - f) What is closed-loop congestion control? Write any three policies used to control congestion?

3. A) Write any two points of difference between OSI reference model and TCP/IP. Also explain the functionalities of physical and data link layer in TCP/IP protocol suit. 6

OR

 - A) Explain with an example cyclic redundancy check (CRC) technique to detect error. 6
 - B) What do you mean by unguided media? Write a note on radio waves. 6

4. A) Explain with an example character count data framing method. 6

OR

 - A) Explain Stop-and-Wait protocol used at data link layer. 6
 - B) Explain with an example hierarchical routing algorithm. 6

5. A) Explain IP addresses classification. Which address is used for broadcasting on local network? What are the maximum numbers of networks possible in class B? What are the maximum numbers of hosts that can be connected in each class B network? 6

OR

A) Draw IPv4 Frame Format and explain the following fields type of service, protocol, destination address and header checksum. 6

B) Explain briefly RARP and DHCP. 6

6. A) Explain the Socket primitives used in Berkeley. 6

OR

A) Draw TCP segment header and explain the following fields FIN flag, RST flag, window size and source port. 6

B) Write a note on MIME. 6

Total No. of Printed Pages:2

**B.Sc. Course (CBCS) Ordinance (Semester-V)
EXAMINATION OCTOBER 2019
Computer Science: Object Oriented Programming**

[Duration : Two Hours]

[Max. Marks:80]

Instructions:

- i) Questions 1-6 are compulsory
- ii) Figures to the right indicate marks

- Q.1 **Answer any four of the following** **4X4=16**
- a) Explain the following terms with respect to Object Oriented Software construction
 - i) Seamlessness
 - ii) Redefinition
 - b) Briefly explain the different categories on which the set of criteria for object oriented software construction is based upon.
 - c) What is the premature ordering problem found in functional decomposition? Briefly explain how this problem is taken care of in object – oriented approach
 - d) Explain the concept of Container class and Definition class with simple examples.
 - e) Explain with an example code the concept of method overloading in Java.
 - f) Distinguish between Java heap space and stack memory (any four points)
- Q.2 **Answer any four of the following:** **4X4=16**
- a) Explain with a simple example what is meant by method overriding.
 - b) Explain how an abstract class differs from concrete class.
 - c) Explain the significance of Java interfaces. What types of variables can be defined in a java interface?
 - d) Explain the purpose of throw statement in java
 - e) Briefly outline the use of any four Java Collection framework interfaces
 - f) What are the benefits of using design patterns for software development ?
- Q.3 **Answer the following :**
- A) Explain single inheritance with the help of example code in Java. **06**
- OR
- A) Explain the role of Abstract classes with the help of example code in Java. **06**
- B) Explain the significance of constructors in a software class design. Create a simple class in Java which uses a 2 – argument constructor and instantiate the same in the client class. **06**
- Q.4 **Answer the following :**
- A) Explain with an example Java code user defined exceptions. **06**
- OR
- A) Explain nested try statements with the help of example Java code. **06**

- B) Explain the reference counting garbage collection technique .what are its advantages and disadvantages? 06

Q.5 **Answer the following :**

- A) Explain the concept of generic classes with an example class with atleast one parameter type. 06

OR

- A) With the help of example Java code, briefly explain the use of any three collection classes. 06

- B) Explain the different components of Java Collection Framework? 06

Q.6 **Answer the following :**

- A) Explain the Iterator design pattern with the help of example code. 06

OR

- A) Explain the Adaptor design pattern with the help of example code. 06

- B) Explain the steps involved in creating a Singleton design Pattern. What are its different forms? Explain its advantages and usage. 06

Total No. of Printed Pages:2

**B.Sc. Course (CBCS) Ordinance (Semester-V)
EXAMINATION OCTOBER 2019
Computer Science : Software Engineering**

[Duration : Two Hours]

[Max. Marks : 80]

Instructions:-

1. Questions 1-6 are COMPUSLORY.
2. Figures to the right indicate marks.

- Q.1 **Answer the following. (Any 4)** (4x4=16)
- a) What are the advantages of Waterfall Model?
 - b) Why Software development should be done in phases?
 - c) What is Test Oracle?
 - d) What is Reverse Engineering?
 - e) What are advantages of Centralized Version Control System?
 - f) Explain any three Agile Manifesto Values.
- Q.2 **Answer the following. (Any 4)** (4x4=16)
- a) What is Agile?
 - b) Explain Commit and Synchronization with reference to Git.
 - c) What is Pair Programming?
 - d) What are the various characteristics of Scrum?
 - e) What is Black box Testing?
 - f) What is burn down chart?
- Q.3 **Answer the following:**
- A. Explain various Criteria of user stories. (6)
- OR**
- A. What are various rules of Planning Poker? (6)
- B. Explain various values of Extreme Programming. (6)
- Q.4 **Answer the following:**
- A. What are the advantages of Extreme Programming? (6)
- OR**
- A. What are the various benefits of Test Driven design? (6)
- B. List ten practices for effective Continuous Integration. (6)
- Q.5 **Answer the following:**
- A. Why Refactoring is done? (6)
- OR**
- A. Explain various advantages of Equivalence Class Partitions. (6)
- B. Write note on Testing Tools. (6)

Q.6 Answer the following:

A. Explain various categories of Software Reviews. (6)

OR

A. Explain various types of Peer Reviews. (6)

B. Write note on Scrum Framework. (6)