Code No: RT32052 **R13** SET - 1

III B. Tech II Semester Regular Examinations, April - 2016
DATA WARE HOUSING AND MINING
(Common to CSE and IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	What is a Data warehouse? Briefly describe the need for data warehousing.	[4M]
	b)	What is Data integration?	[4M]
	c)	Describe different types of OLAP servers.	[4M]
	d)	Describe random sub sampling.	[3M]
	e)	Define a frequent set.	[3M]
	f)	Describe different types of clustering.	[4M]

PART -B

2	a)	What is data mining? Briefly explain the Knowledge discovery process.	[8M]
	b)	Discuss about Data Mining Task Primitives.	[8M]
3		With examples, discuss in detail about the available techniques for concept hierarchy generation for categorical data.	[16M]
4	a)	Explain the three-tier data warehouse architecture.	[8M]
	b)	What is a concept hierarchy? Describe the OLAP operations in the Multidimensional data model.	[8M]
5	a)	Why pruning is useful in decision tree induction? What is a separate set of tuples to evaluate pruning?	[8M]
	b)	Why naive Bayesian classification is called naïve? Briefly outline the major ideas of naive Bayesian classification.	[8M]
6	a)	Explain difference between partitions based Apriori and Apriori algorithm.	[8M]
	b)	Write an algorithm for finding frequent item-sets using candidate generation.	[8M]
7		With a suitable example, explain K-Means Clustering algorithm.	[16M]

Code No: RT32052 **R13** SET - 2

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2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Describe about transactional database.	[4M]
	b)	What is Data cleaning?	[4M]
	c)	What is a data ware house?	[4M]
	d)	Describe holdout method.	[3M]
	e)	Define a FP-tree.	[4M]
	f)	What is Cluster Analysis?	[3M]

PART -B

2	a)	Explain data mining as a step in the process of knowledge discovery.	[8M]
	b)	What are the major issues in Data Mining? Explain.	[8M]
3	a)	What is Data integration? What is entity identification problem and why it is useful?	[3M]
	b)	What is lossless and lossy dimensionality reduction? Describe any one technique for lossy dimensionality reduction.	[8M]
4	a)	Differentiate between operational data base system and data warehouses.	[8M]
	b)	What is a concept hierarchy? Describe the OLAP operations in the Multidimensional data model.	[8M]
5	a)	Explain the classification by decision tree induction with an example.	[8M]
	b)	Explain the following accuracy measures: (a) F-measure (b) Confusion matrix (c) Cross-validation (d) Bootstrap	[8M]
6	a)	The price of each item in a store is non-negative. For each of the following cases, identify the kind of constraint they represent and briefly discuss how to mine such association values efficiently a) containing at least one Nintendo game, b) containing items the sum of whose price is less than $150.	[8M]
	b)	Explain frequent item sets without candidate generation.	[8M]
7		Explain about K-means algorithm with suitable example.	[16M]

Code No: RT32052 **R13** SET - 3

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Time: 3 hours Max. Marks: 70

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2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Describe about object-relational databases.	[3M]
	b)	What is data reduction? What is dimensionality reduction?	[4M]
	c)	Describe snowflake and fact constellations.	[4M]
	d)	What is Classification? Describe the need for classification.	[4M]
	e)	Define a FP-tree.	[3M]
	f)	Write a note on Hierarchical clustering.	[4M]

PART -B

2	a)	Describe different data mining functionalities.	[8M]
	b)	Draw and explain the architecture of a typical data mining system.	[8M]
3	a)	What is noisy data? Explain the binning methods for data smoothening.	[8M]
	b)	What is data integration? Discuss the issues to be considered for data integration.	[8M]
4	a)	Differentiate OLTP and OLAP.	[8M]
	b)	Explain the three-tier data warehouse architecture.	[8M]
5	a)	What is Eager classification and Lazy classification? Write their advantages and disadvantages.	[8M]
	b)	Explain the issues regarding classification and prediction.	[8M]
6	a)	Explain difference between partitions based Apriori and Apriori algorithm.	[8M]
	b)	Write an algorithm for finding frequent item-sets using candidate generation.	[8M]
7	a)	What is density based clustering? Describe DBSCAN clustering algorithm.	[8M]
	b)	What is partitioning method? Describe any one partition based clustering algorithm.	[8M]

Code No: RT32052 **R13** SET - 4

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Time: 3 hours Max. Marks: 70

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2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Describe heterogeneous and legacy databases.	[4M]
	b)	Describe how correlation coefficient is computed?	[3M]
	c)	What is a Data warehouse?	[4M]
	d)	What is Classification? Describe the need for classification.	[4M]
	e)	Define Apriori property.	[3M]
	f)	Distinguish between classification and clustering.	[4M]

PART -B

2	a)	What are the major issues in Data Mining? Explain.	[8M]
	b)	Draw and explain the architecture of a typical data mining system.	[8M]
3	a)	What is data cleaning? Describe the approaches to fill missing values.	[8M]
	b)	Briefly describe various forms of data pre-processing.	[8M]
4		Briefly discuss about the following data warehouse implementation methods: (a) Indexing OLAP data (b) Metadata Repository.	[16M]
5	a)	Describe the criteria used to evaluate classification and prediction methods.	[8M]
	b)	Explain the following accuracy measures: (i) F-measure (ii) Confusion matrix(iii) Cross-validation (iv) Bootstrap	[8M]
6	a)	Briefly explain about FP- growth algorithm. Write its advantages over other mining algorithms.	[8M]
	b)	Write an algorithm for finding frequent item-sets using candidate generation.	[8M]
7	a)	What is clustering analysis? Give the different types of clustering techniques.	[4M]
	b)	Consider five points $\{X_1,X_2,X_3,X_4,X_5\}$with the following coordinates as a two dimensional sample for clustering : X_1= (0.5, 2.5); X_2= (0, 0); X_3= (1.5, 1); X_4= (5, 1); X_5= (6, 2); Illustrate the K-means partitioning algorithms using the above data set.	[12M]
