Code No: E-12083/CBCS

FACULTY OF INFORMATICS

M.C.A. (3 Years Course) IV - Semester (CBCS) (Backlog) Examination,
October/ November 2023

Subject: Data Mining

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit – I

1. a) Discuss the challenges & Origins of Data mining.
   b) Explain dimensionality reduction in detail.

(OR)

2. a) Discuss measures of similarity & dissimilarity.
   b) Describe OLAP & Multidimensional data analysis.

Unit – II

3. a) Discuss what is classification and also explain descriptive & predictive modeling .
   b) Explain web robot detection example in detail.

(OR)

4. a) Describe model over fitting in detail.
   b) Explain how a Rule-based classifier works.

Unit – III

5. a) Discuss the nearest-neighbor algorithm & Characteristics of nearest-neighbor classifier.
   b) Explain Artificial Neural Network Model in detail.

(OR)

6. a) Discuss Support Vector Machine.
   b) Explain the class imbalance problem in detail.

Unit – IV

7. a) Describe how to extract association rules efficiently from a given frequent itemset.
   b) Explain the alternative methods for generating frequent item sets.

(OR)

8. a) Discuss how to generate frequent itemsets from an FP-Growth algorithm.
   b) Explain the effect of Skewed support distribution.

Unit – V

9. a) Discuss agglomerative hierarchical clustering.
   b) Explain DB-SCAN algorithm in detail.

(OR)

10. a) Discuss prototype-based clustering.
    b) Explain K-means algorithm additional issues.

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Code No: E-12211 /CBCS

FACULTY OF INFORMATICS

M.C.A. (2 Years Course) IV - Semester (CBCS) (Main & Backlog) Examination, October/ November 2023

Subject: Block Chain Techniques

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit - I

1. a) Explain the message digest.
   b) Discuss the concept of blockchains.

(OR)

2. a) Write noted on hiding property.
   b) Describe the merkle trees.

Unit – II

3. a) Elaborate digital signature schemas.
   b) Give an overview of cryptocurrencies and encryption.

(OR)

4. a) Write notes on security and randomness.
   b) Illustrate cryptocurrency with an example.

Unit – III

5. a) Write notes on breaking traditional assumptions.
   b) Explain the bitcoin consensus algorithm.

(OR)

6. a) Give an overview of parametizable cost property.
   b) Discuss about the escrow transactions.

Unit – IV

7. a) Give an overview of hierarchical deterministic wallets.
   b) Explain about threshold cryptography.

(OR)

8. a) Discuss the concept of online wallets.
   b) Describe the proof of liabilities.

Unit – V

9. a) Explain about finding a valid block.
   b) Write notes on GPU mining.

(OR)

10. a) Write the ethics of anonymity.
    b) Discuss the process of minting zerocoins.

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Code No. E-12212/CBCS

FACULTY OF INFORMATICS

M.C.A. (2 Years Course) IV - Semester (CBCS) (Main & Backlog) Examination, October/ November 2023

Subject: Big Data Analysis

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit – I

1. a) Explain Structuring Big Data, Types of Data, and Elements of Big Data.
   b) Discuss Distributed and Parallel Computing for Big Data.

(OR)

2. a) Describe Cloud Computing and Big Data, Features of Cloud Clouding.
   b) Discuss Cloud Providers in Big Data Market.

Unit – II

3. a) Discuss Hadoop Ecosystem.
   b) Explain HBase Architecture and Regions.

(OR)

4. a) Describe how to combine HBase and HDFS.
   b) Discuss about Zookeeper, Flume, Oozie, Sqoop.

Unit – III

5. a) Discuss the MapReduce Framework.
   b) Explain Big Data Stack.

(OR)

6. a) Discuss the Hardware/Network Topology of MapReduce.
   b) Explain the Physical Infrastructure Layer, Platform Management Layer, Security Layer.

Unit – IV

7. a) Can we use RDBMS for Big Data.
   b) How to integrate Big Data with Traditional Data Ware house.

(OR)

8. a) Discuss the issues with Non-Relational Database.
   b) Write the differences between Big Data Analysis and Data Warehouse.

Unit – V

9. a) Write the characteristics & History of NoSQL.
   b) Discuss CAP theorem.

(OR)

10. a) Explain Schema-less Databases.
    b) Discuss Key-Value Data model & Document Data Model.

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Code No: E-12213/CBCS

FACULTY OF INFORMATICS

M.C.A. (2 Years Course) IV - Semester (CBCS) (Main & Backlog) Examination, October/ November 2023

Subject: Cloud Computing

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit - I

1. a) What is Cloud Computing? Explain the challenges and legal issues in Cloud Computing?
   b) List and Explain three Service Models of Cloud Computing.

(OR)

2. a) What do you mean by Virtualization?
   b) What is Sandboxing? What is the difference between Sandboxing and Virtualization?

Unit - II

3. a) What is Scaling and Scaling Strategies in Cloud?
   b) What are the types of Scaling? Explain.

(OR)

4. a) What do you mean by capacity planning.
   b) What is the importance of Load Balancing in Cloud Computing?

Unit - III

5. a) Explain Content Delivery Network with a Model.
   b) How CDN services are associated with Cloud Computing?

(OR)

6. a) What is Security Reference Model?
   b) Explain Deployment and Service Models.

Unit - IV

7. a) What is Portability in Cloud Computing?
   b) What is the goal of Interoperability in Cloud Environment?

(OR)

8. a) Explain Cloud Service Management.
   b) What is SLA Management? Explain types of SLA?

Unit - V

9. a) What is SOA in Enterprise Application?
   b) What are the types of Architecture?

(OR)

10. a) Explain Ecosystem in Cloud Computing.
    b) What are the benefits of Cloud Ecosystem?

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Code No: E-12214/CBCS

FACULTY OF INFORMATICS

M.C.A. (2 Years Course) IV - Semester (CBCS) (Main & Backlog) Examination,
October/ November 2023
Subject: Deep Learning

Time: 3 Hours **Max. Marks: 70**

Note: I. Answer one question from each unit. All questions carry equal marks.
II. Missing data, if any, may be suitably assumed.

Unit – I

1. a) What is Deep Learning? List the various Key Components of Deep Learning.
   b) Explain different types of Propagations in Deep Learning.

(OR)

2. a) What is an optimization problem in deep learning?
   b) What are the optimization algorithms in deep learning? Explain any one algorithm with suitable example.

Unit - II

3. a) What is computation in deep learning? Explain types of computational Graphs.
   b) What is Convolutional Neural Network? Discuss for which purpose it is used.

(OR)

4. a) Discuss deep Convolutional neural networks(AlexNet).
   b) Explain Networks using blocks(VGG) and parallel concatenations(GoogleNet).

Unit - III

5. a) What is Recurrent Neural Network in deep learning? How Recurrent Neural Network works.
   b) List Modern Recurrent neural networks with examples.

(OR)

6. a) What are encoder-decoder architecture in Recurrent neural network?
   b) Explain in brief sequence to sequence with attention mechanism.

Unit - IV

7. a) How is deep learning used in computer vision? Give example.
   b) What is the most commonly used deep learning network in computer vision?

(OR)

8. a) What is Image Classification? Which algorithm is best for image classification in Kaggle?
   b) Explain in detail about fully convolutional networks (FCN).

Unit - V

9. a) Define Generative adversarial networks? What sorts of distributions can GANs model?
   b) What is the relationship between GANs and adversarial examples?

(OR)

10. a) List out the Tools used for Deep Learning? Why do we use Jupyter Notebook for machine learning?
    b) How do I run deep learning project on Google Colab?

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