

Roll No.

3717

**B. Tech. 8th Semester (Computer
Science & Engg.)
Examination – May, 2026**

MACHINE LEARNING

Paper : PCC-CSE-402-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Write short note on following : 15
- (a) Kernel Trick in SVM.
 - (b) Feature Extraction Vs Feature Selection
 - (c) Linear Regression
 - (d) Overfitting
 - (e) Median Absolute Deviation.

UNIT – I

2. Define term Machine Learning ? Explain its importance, work flow and applications in the modern world. 15
3. What is Supervised Learning ? Compare it with Unsupervised and Reinforcement learning with suitable example. 15

UNIT – II

4. (a) Describe term Dimensionality Reduction. Why is Dimensionality reduction important in ML ? 7
- (b) Write steps of PCA Algorithm with example. 8
5. Explain term Data preprocessing & its importance in Machine Learning. Write steps of Data preprocessing in ML. 15

UNIT – III

6. What is a Decision Tree ? Describe the key terminologies and the splitting criterion used in Decision Trees. 15

7. Describe the K-Nearest Neighbours Algorithm in a stepwise manner with a suitable example and explain the impact of choosing different values of k. 15

UNIT – IV

8. Explain the concept of Ensemble Learning compare bagging and boosting techniques in ML. 15
9. Describe the evaluation metrics derived from confusion Matrix. 15
-

Roll No.

3718

**B. Tech. 8th Semester (Computer Science &
Information Technology)**

Examination – May, 2026

BIG DATA ANALYTICS

Paper : PCC-CSE-404-G/PCC-IT-403-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No 1 is *compulsory*. All questions carry equal marks.

- 1. Write a short notes on the following : $2.5 \times 6 = 15$**
- (a) Distributed File Systems
 - (b) ETL Process
 - (c) NoSQL Databases
 - (d) Data Pipelines
 - (e) Big Data File Formats
 - (f) Information Integration

UNIT – I

2. Explain the concept of Big Data and its importance in the modern digital world. Discuss its characteristics and major applications. 15
3. Describe the steps in the data science process. Explain the role of distributed file systems and Big Data programming frameworks. 15

UNIT – II

4. Explain data repositories used in Big Data platforms. Discuss RDBMS, NoSQL databases, and Data Lakes with suitable examples. 15
5. Describe the Big Data processing tools and modern ecosystem. Explain different sources of data using service bindings. 15

UNIT – III

6. Discuss the process of Big Data modeling and management. Explain data ingestion, storage mechanisms, and scalability issues. 15
7. Explain various types of Big Data models. Discuss data structure, operations, and constraints with suitable examples. 15

UNIT – IV

- 3. Explain Big Data integration techniques and data retrieval methods used in large-scale systems. 15**
 - 4. Discuss Big Data analytical operations and workflow management systems used for Big Data processing. 15**
-

Roll No.

3719

**B. Tech. 8th Semester
(Computer Science & Engg.)
Examination – May, 2026**

WIRELESS ADHOC AND SENSOR NETWORKS

Paper : OEC-ECE-430-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Write short notes on the following : $2.5 \times 6 = 15$

- (a) Applications of MANETs
- (b) Topology-based routing algorithms
- (c) Geocasting
- (d) MAC layer in sensor networks
- (e) Intrusion detection systems in MANETs
- (f) TinyOS operating system

UNIT – I

2. Define Mobile Ad Hoc Networks. Explain their features and discuss various challenges in designing MANETs. 15
3. Explain different routing algorithms used in MANETs. Compare topology-based routing and position-based routing protocols. 15

UNIT – II

4. Discuss different data transmission techniques in ad hoc networks including broadcasting, multicasting, and geocasting. 15
5. Explain the problems faced by TCP in MANETs. Discuss techniques used to improve TCP performance in mobile ad hoc networks. 15

UNIT – III

6. Explain the architecture of wireless sensor networks. Discuss the role of different layers in sensor network communication. 15
7. Discuss applications and classifications of wireless sensor networks. Explain their importance in modern communication systems. 15

UNIT – IV

8. Discuss security challenges in ad hoc networks, Explain key management and cooperation mechanisms in MANETs. 15
 9. Explain sensor network programming platforms and tools. Discuss TinyOS, nesC programming language, and node-level simulators used for sensor networks.15
-