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**B.Tech. (Computer Science & Engineering)**  
**8th Semester, G-Scheme Examination, May-2025**  
**MACHINE LEARNING**  
**Paper - PCC-CSE-402G**

*Time allowed : 3 hours]*

*[Maximum marks : 75*

**Note :** *All Questions carry equal marks. Question No.-1 is compulsory. Attempt five questions in total by selecting one from each unit.*

1. Write short notes on :

- (a) ML life cycle.
- (b) Feature extraction.
- (c) Decision Trees.
- (d) Median Absolute Deviation.
- (e) SVM Kernels.
- (f) Confusion matrix

6×2.5=15

3717-P-3-Q-9(25)

[P.T.O.]

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**Unit-I**

2. What do you mean by Machine learning? State its important features & current applications. 15
3. Define Supervised learning. How it is different than unsupervised & reinforcement learning? 15

**Unit-II**

4. Describe the data preprocessing method in detail. 15
5. (a) Need of dimensionality reduction. 5  
(b) Principal component Analysis. 10

**Unit-III**

6. Explain working of Naive Bayes algorithm with an example. 15
7. Why K-NN is known as non- parametric and lazy learner algorithm ? Discuss the K-NN algorithm in detail with example. 15

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**Unit-IV**

8. Describe the ensemble approach used in ML. 15
9. (a) ROC-AUC 5  
(b) Performance metrics. 10

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**B.Tech. (Computer Science and Information Technology)**

**8th Semester, G-Scheme Examination, May-2025**

**BIG DATA ANALYTICS**

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

*Time allowed : 3 hours]*

*[Maximum marks : 75*

*Note : Attempt five questions in total, Question No.-1 is compulsory and select one question from each unit. All Questions carry equal marks.*

1. Write a short notes on the following :

- (a) Data Sciences
- (b) ELT
- (c) RDMS vs. Data warehouse
- (d) Data ingestion
- (e) CRUD operation
- (f) Mongo DB

6×2.5=15

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**Unit-I**

2. (a) What is Big Data ? Explain various characteristics, challenges and applications of Big Data. 8
- (b) Explain six Vs of Big Data with example. 7
3. (a) What is Hadoop ? Explain its architecture and components. 10
- (b) What are the various steps involved in data science process. 5

**Unit-II**

4. (a) Define Data Mart ? Explain different types of data marts with example. Also advantages and disadvantages of data marts. 8
- (b) Explain different types of No SQL databases with example ? Differentiate SQL and NoSQL with example. 7
5. Explain various types of data repositories used for big data in detail. 15

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**Unit-III**

6. (a) Explain various aspects of the big data management system. 8
- (b) Write short notes on data operations and real-life application of big data. 7
7. What is Modeling ? Explain various types of data models with example. 15

**Unit-IV**

8. What is Hive ? Explain Hive features, Hive integration and work flow, architecture and Hive query language (HQL) in detail. 15
9. Write a short note the following :
  - (a) Big data analytical operations 8
  - (b) Big architecture and its commands to process big data. 7

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**B.Tech. (Computer Science and Engineering)**  
**8th Semester, G-Scheme Examination, May-2025**  
**WIRELESS ADHOC AND SENCOR NETWORKS**  
**Paper - OEC-ECE-430-G**

*Time allowed : 3 hours]*

*[Maximum marks : 75*

*Note : Questions NO.-1 is compulsory. Answer any one question from each of the remaining four units. All questions carry equal marks.*

1. Explain the following : 5 × 3=15

- (a) What do you mean by a routing table.
- (b) How a reactive routing protocol is different from a proactive routing protocol ?
- (c) What is hidden terminal problem ?
- (d) Differentiate between active and passive sensors.
- (e) Explain Tiny GALS.

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**Unit-I**

2. (a) Explain the characteristics of Mobile Ad hoc Networks (MANETs)? 8
- (b) List and brief the various applications of MANETs. 7
3. (a) Give the taxonomy of MANET routing algorithm? 8
- (b) Explain and illustrate any one Topology-based Routing algorithm. 7

**Unit-II**

4. (a) Differentiate DSDV and AODV. 8
- (b) What is broadcast storm problem? How to avoid this problem? 7
5. (a) What is multicast? Explain any one application of multicast in detail. 8
- (b) Explain any two variation in TCP protocol with their advantages and disadvantages. 7

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**Unit-III**

6. (a) Explain MAC protocols for wireless sensors Networks. 8
- (b) Elaborate the sensor network architecture with a diagram. 7
7. List the design goals of MAC protocol for ad-hoc networks. 15

**Unit-IV**

8. (a) Write the functionalities of NS-2 in the simulation of sensor network. 8
- (b) Mention the use of TOSSIM simulator in modelling wireless network. 7
9. Explain the features and limitations of Tiny OS. 15

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