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Question Paper Code	13088
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M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024

Third Semester

M.E. - Embedded Systems Technologies

20PESEL306 - MACHINE LEARNING

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	Marks	K-Level	CO
1. What are the major components involved in each machine algorithm?	2	K1	CO1
2. Distinguish instance based learning vs model based learning.	2	K2	CO1
3. Compare linear regression model and logistic regression model.	2	K2	CO2
4. What are the advantages of Naive Bayes?	2	K1	CO2
5. Define Reinforcement Learning.	2	K1	CO4
6. Compare the differences between Supervised and Reinforcement Learning.	2	K2	CO4
7. How machine learning increases the efficiency of IoT?	2	K1	CO5
8. Recall the applications of IOT for classification methods.	2	K1	CO5
9. Why is cloud computing important in machine learning?	2	K1	CO6
10. List out any five application of ML across industries.	2	K1	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Outline about decision tree.	13	K3	CO1
OR			
b) Enumerate the categories of Machine Learning and explain with its real time application.	13	K3	CO1
12. a) Consider the training dataset given in the following table. Use Weighted K-NN and determine the class. Test instance (7.6, 60, 8) and K=3.	13	K4	CO2

S.No.	CGPA	Assessment	Project Submitted	Result
1	9.2	85	8	Pass
2	8	80	7	Pass
3	8.5	81	8	Pass
4	6	45	5	Fail
5	6.5	50	4	Fail
6	8.2	72	7	Pass
7	5.8	38	5	Fail
8	8.9	91	9	Pass

OR

- b) Illustrate support vector machine with an example in classifying the patterns in data. 13 K4 CO2
13. a) Illustrate in detail about Montecarlo prediction. 13 K2 CO4

OR

- b) Explain with a simple example how the Markov Decision Process works. 13 K2 CO4
14. a) Examine how Machine Learning algorithms are used for IoT applications. 13 K4 CO5

OR

- b) Analyse the application of Machine Learning in IoT Security and Autonomous Vehicles. 13 K4 CO5
15. a) Examine why is cloud computing important in Machine Learning? Explain in detail the Cloud Computing platforms for Machine Learning? 13 K4 CO6

OR

- b) Analyse in detail, the Machine Learning Applications in Healthcare. 13 K4 CO6

PART - C (1× 15 = 15 Marks)

16. a) Explain the steps in the K-Means algorithm. Cluster the following set of four objects into two clusters using k-means A(3,5), B(4,5), C(1,3), D(2,4). Consider the objects A and C as the initial cluster centers. 15 K4 CO3

OR

- b) Compute the principle component vectors and the first principle components for the given data. 15 K4 CO3

Feature	Example 1	Example 2	Example 3	Example 4
X_1	4	8	13	7
X_2	11	4	5	14