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PRESIDENCY UNIVERSITY BENGALURU

 SCHOOL OF COMPUTER SCIENCE & ENGINEERING

 Make-up EXAMINATION - July 2024

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| **Semester : 6** | **Date : 02/07/2024** |
| **Course Code : CSE3008** | **Time : 9.30 AM to 12.30 PM** |
| **Course Name : Machine Learning Techniques** | **Max Marks : 100** |
| **Program : BTech** | **Weightage : 50%** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

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| **PART A** |
|  **ANSWER ANY 5 QUESTIONS 5Q X 2M=10M** |
| 1 | What are the different types of data used in ML. Give an example for each. | (CO 1) | [L1] |
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| 2 | List out feature engineering techniques for ML. | (CO1) | [L1] |
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| 3 | Give Bayes’ theorem formula and explain its terms. | (CO1) | [L1] |
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| 4 | Sketch the general idea of ensemble learning. | (CO2) | [L1] |
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| 5 | Below are the 8 actual values of target variable in the train file.[0,0,0,1,1,1,1,1] What is the entropy of the target variable?  | (CO2) | [L2] |
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| 6 | Give error rate E, importance of a classifier (alpha) formula in Adaboost technique. | (CO3) | [L2] |
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| 7 | Differentiate classification and regression with suitable examples. | (CO4) | [L2] |
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| **PART B** |
|  **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** |
| 8 | Discuss categorical encoding techniques in ML. | (CO4) | [L2] |
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| 9 | Briefly explain feature selection techniques in supervised ML. | (CO1) | [L2] |
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| 10 | Explain Bagging with suitable example. (Assume split ratio). | (CO2) | [L2] |
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| 11 | Explain cost function and optimization in regression. | (CO3) | [L2] |
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| 12 | Explain the flowchart of Apriori algorithm. | (CO4) | [L2] |
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| 13 | Define clustering. What are the different types of clustering explain in detail? | (CO4) | [L2] |
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| 14 | How Matrix factorization works in PCA. Explain in detail? | (CO3) | [L2] |
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| **PART C** |
|  **ANSWER ANY 2 QUESTIONS 2Q X 20M=40M** |
| 14 | Explain boosting and ADA boosting algorithm with neat sketch? | (CO1) | [L2] |
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| 15 | Explain any 2 machine learning algorithms and their performance factors? | (CO2) | [L2] |
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| 16 | What is reinforcement learning explain its detailed concepts? | (CO4) | [L2] |
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