**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **3BC5161** | Roll No. | Total Printed Pages: 1 |
| **3BC5161** |  |
| BCA III Year V-Semester (Main/Back) End Semester Examination, November 2022  **(DS)** | |
| **BCD05101 : Advanced Machine Learning** | | | |

# Time: **3**Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | Enumerate the Working principles of Machine Learning. | **(6)** | **UNDERSTAND** |
|  |  |  |  |  |
|  | **(b)** | Explain Machine Learning with its type in detail. | **(6)** | **UNDERSTAND** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.2** |  | What are the available for Performance metrics for Clustering? Describe in detail with appropriate formulae. | **(12)** | **EVALUATE** |
|  |  | **UNIT-II (CO2)** |  |  |
|  |  |  |  |  |
| **Q.3** |  | Explain Reinforcement Learning with suitable diagram and example. | **(12)** | **UNDERSTAND** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.4** |  | Explain about State Action Reward State action (SARSA) and How is SARSA different from the Q-learning algorithm? | **(12)** | **APPLY** |
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|  |  | **UNIT-III (CO3)** |  |  |
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| **Q.5** |  | Describe the steps of Decision tree with example | **(12)** | **APPLY** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.6** |  | Discuss about SVM with suitable example | **(12)** | **APPLY** |
|  |  |  |  |  |
|  |  | **UNIT-IV (CO4)** |  |  |
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| **Q.7** |  | Find **FOUR** clusters from the following data points, (3,3), (2,3), (5, 6), (6,6), (11,16), (14,12), (25,35),(23,31),(27,32) using **K-means** algorithm | **(12)** | **APPLY** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.8** |  | Differentiate Divisive Approach and the Agglomerative Approach in Clustering with examples | **(12)** | **ANALYZE** |
|  |  |  |  |  |
|  |  | **UNITV (CO5)** |  |  |
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| **Q.9** |  | Define : Forecasting and Explain about the components of Time Series Data with proper example | **(12)** | **EVALUATE** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** |  | Differentiate ARIMA and ARMA | **(12)** | **ANALYZE** |