**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **4BT7139** | Roll No. | Total Printed Pages: 2 |
| **4BT7139** |  |
| B. Tech. IV Year VII- Semester (Main/Back) End Semester Examination, November 2022  **(CE)** | |
| **BCE07108 : Introduction to Data Science** | | | |

# 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)** | Discuss the role of data science in today’s business world. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Define data science? List out the different data science techniques. Explain any 2. | **(6)** | **understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.2** | **(a)** | Discuss the goal of data science. Explain a real-world application of data science. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | What is artificial intelligence? Explain with a suitable diagram. List out the primary components of data science. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **UNIT-II (CO2)** |  |  |
|  |  |  |  |  |
| **Q.3** | **(a)** | List the application of statistical techniques in Data Science. Explain any 1 in brief. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Describe Normal distribution. Create a normal distribution problem and solve it with the help of normal distribution. | **(6)** | **Apply** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.4** | **(a)** | What is linear algebra? Justify linear algebra plays an important role in data science. | **(6)** | **Evaluate** |
|  |  |  |  |  |
|  | **(b)** | Demonstrate Left skewed distribution. Solve a left-skewed distribution problem. Assume parameters yourself. | **(6)** | **Apply** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
|  |  |  |  |  |
| **Q.5** | **(a)** | Differentiate between supervised and unsupervised machine learning. What is underfitting and overfitting in machine learning? | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Define classification. How will you classify given data? Explain with a suitable example. | **(6)** | **Evaluate** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.6** | **(a)** | Differentiate between machine learning and deep learning. Explain with a suitable diagram. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Justify Data science is multidisciplinary. Explain with a suitable example. | **(6)** | **Evaluate** |
|  |  |  |  |  |
|  |  | **UNIT-IV (CO4)** |  |  |
|  |  |  |  |  |
| **Q.7** | **(a)** | Discuss the role of computers in data science. Describe the application of Hadoop and also write the properties of Hadoop. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Differentiate between SQL and NoSQL. Which one is most widely used? And why? Justify Your answer. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.8** | **(a)** | Describe Neural Networks in machine learning with a Suitable example. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | List out the application of RDBMS in data science. Explain 2 databases that use RDBMS. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | Create a diagram that shows the life cycle of a data science project and explain all the terms used in the life cycle of the data science project. | **(6)** | **Create** |
|  |  |  |  |  |
|  | **(b)** | How does data science work in fraud detection in the telecom industry? | **(6)** | **Analyze** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** | **(a)** | Explain the framework of a data science project. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | How Recommendation engines are useful? Create a recommendation engine to help the students to take admission in Poornima University. | **(6)** | **create** |