**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **3BC5149** | Roll No. | Total Printed Pages: 2 |
| **3BC5149** |  |
| BCA III Year V- Semester (Main/Back) End Semester Examination, November 2022  **(GEN)** | |
| **BCA05104 : Artificial Intelligence** | | | |

# 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)** | What do you understand by search strategies and compare BFS, DFS and IDDFS along with their complexities? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Calculate shortest path from S to G using A\* Algorithm with proper explanation? | **(6)** | **Application** |
|  |  | **OR** |  |  |
| **Q.2** | **(a)** | What are the different approaches to artificial intelligence, and briefly describe different search strategies? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Apply BFS and DFS on below graph and calculate their complexity also: - | **(6)** | **Application** |
|  |  | **UNIT-II (CO2)** |  |  |
| **Q.3** | **(a)** | Explain water jug problem for game playing with using proper notations? | **(6)** | **Application** |
|  |  |  |  |  |
|  | **(b)** | Apply MINMAX Algorithm on below graph- | **(6)** | **Application** |
|  |  | **OR** |  |  |
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| **Q.4** | **(a)** | Describe the α-β pruning algorithm and apply it to the graph below? | **(6)** | **Application** |
|  |  |  |  |  |
|  | **(b)** | What are you understand by game playing and mention their component and use in AI? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
|  |  |  |  |  |
| **Q.5** | **(a)** | If an AI Agent want to create knowledge-based system, what will be planning process and how he will use partial order planning for the same? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | How did Bayesian network give an output for making decision for build a knowledge-based system? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.6** | **(a)** | What are the possible ways to deal with uncertainty in reasoning for making knowledge base? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Why do we use first order logic for knowledge-based system instead propositional logic? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **UNIT-IV (CO4)** |  |  |
|  |  |  |  |  |
| **Q.7** | **(a)** | How did an unsupervised learning help to predicate Market Basket Analysis? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Why do we use support vector machine for classification process and explain concept of support vector machine? | **(6)** | **Application** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.8** | **(a)** | What do you understand by neural network and how it will help to predicate future variable of any research field topic? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | What do you understand by learning decision tree and how it work to decide approval for a loan? | **(6)** | **Application** |
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|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | What are the applications and limitations of Natural Language Processing in AI? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | For making NLP Base, what are the techniques used for making NLP Base? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** | **(a)** | Expert system is new born AI for upcoming decades; briefly explain expert system on given statement? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | How did an Artificial intelligence work with Robotics and how it differs with the robotics? | **(6)** | **Knowledge** |