VR20 Reg. No: 208N1A1299

VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

III/IV B.Tech. DEGREE EXAMINATION, AUGUST, 2022

Fifth Semester

COMPUTER SCIENCE AND ENGINEERING

20IT5205A AI TOOLS, TECHNIQUES AND APPLICATIONS

(CBCS)

Time: 3 hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1. a. Define artificial intelligence.
   b. List out the applications of AI.
   c. Expand PEAS.
   d. State the principle of maximum expected utility.
   e. Where do we use Bayesian networks?
   f. Why would we want an agent to learn?
   g. How NLP works?
   h. What are the challenges of building a successful chatbot?
   i. Mention the action value function.
   j. Differentiate active and passive reinforcement learning.

20IT5205A

PART-B

4 x 15 = 60M

UNIT-I

2. a. Provide a brief history of the disciplines that contributed ideas, viewpoints, and techniques to AI. **7M**

   b. Analyze the syntax and semantics related to first-order logic. **8M**

(or)

3. a. Compare the features of uninformed search strategies. **7M**

   b. Examine the implementation of any two uninformed search strategies. **8M**

UNIT-II

4. a. Illustrate the concepts of basic probability notation. **7M**

   b. Demonstrate the procedure for construction of a decision tree. **8M**

(or)

5. a. State Bayes theorem and inspect its usage with an example. **7M**

   b. Diagnose the mechanism for choosing attribute tests in a decision tree. **8M**

UNIT-III

6. a. How to build a chatbot? Interpret the procedure in detail. **7M**

   b. List out and explain the basic components of natural language processing. **8M**

(or)

7. a. Discuss the enterprise applications of natural language processing. **7M**

   b. Analyze some of the basic best practices for building chatbots. **8M**

UNIT-IV

8. a. Outline the implementation of reinforcement learning with an example. **7M**

   b. Illustrate the working of Google's DeepMind in AlphaGo. **8M**

(or)

9. a. Analyze the characteristics of the environment in choosing the right models for AI. **7M**

   b. How AI is better than humans in games like Jeopardy? Discuss. **8M**

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