**D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

**Q. Paper Code:**

**22SYAIML2014213**

S. Y. B. Tech, AIML, Sem-IV

**END SEMESTER EXAMINATION, JUNE – 2022**

Course Name**: Fundamental of Artificial Intelligence** Course Code:201AIMLL213

Seat No:

**Day and Date: Tuesday, 21/06//2022**

**Time: 9.30 am to 1.15 pm Max. Marks- 100**

***Instructions:***

1. *Question No. 1 is compulsory.*
2. *Figure to the right indicate full marks.*

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| --- | --- | --- | --- | --- |
| **BT** | **CO’s** | **Q.No.** |  | **Marks** |
|  |  | **Q.1** | **Attempt the following** | **40 Marks** |
| **2**  **2** | **1**  **1** | **a** | *i)* Explain how AI is used in Expert Systems with examples  ii) Enlist and Explain different application areas of AI | 4  6 |
| **2**  **2**  **2** | **2**  **3**  **4** | **b** | i) Define Universal Quantifier and give any two examples  ii) Explain any two problems in Hill Climbing algorithm  iii) Explain components used in script | 3  3  4 |
| **3**  **2** | **3**  **2** | **c** | i) Write algorithm for depth first search  ii) Explain any two rules of Inference with example | 5  5 |
| **2**  **2** | **4 4** | **d** | i) Explain generalization and specialization of conceptual graph  ii) Write primitive actions used in Conceptual dependency | 5  5 |
|  | | | | |
|  |  | **Q.2** | **Attempt the following** | **20Marks** |
| **2** | **1** | **a** | Explain characteristics of expert system | 6 |
| **2** | **1** | **b** | Explain basic structure of Rule based expert system | 7 |
| **2**  **2** | **1** | **c** | Explain forward chaining in rule based expert system  **OR**  Explain roles of persons involved in development of rule based expert system | 7 |
|  | | | | |
|  |  | **Q.3** | **Attempt any four questions** | **20Marks** |
| **3** | **1** | **a** | Derive the equation for Bayesian rule | 5 |
| **2** | **2** | **b** | What are the sources of uncertain knowledge in expert system | 5 |
| **3** | **2** | **c** | Rule 1: If A is x  Then C is Z { cf 0.8 }  Rule 2: If B is Y  Then C is Z { cf 0.6}  Find combined certainty factor where **CF (E1) =1** and CF (E2) = **- 1** | 5 |
| **3** | **2** | **d** | How does expert system establish the certainty factor for rules with multiple Antecedents | 5 |
| **2** | **2** | **e** | What is joint probability and conditional probability? | 5 |
|  | | | | |
|  |  | **Q.4** | **Attempt the following** | **20Marks** |
| **2** | **1** | **a** | What is machine learning? Explain its types? | 4 |
| **3** | **1** | **b** | Difference between Machine learning and deep learning | 4 |
| **2** | **1** | **c** | Explain machine learning life cycle | 6 |
| **2** | **1** | **d** | Explain architecture of artificial neural network  **OR**  Explain deep learning applications | 6 |

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