s

| **Vivekanand Education Society’s Institute of Technology, Chembur, Mumbai,**  **Department Of AI and DS,**  **Year:2022-23 (Odd Sem)**  **Test No.- 1** |
| --- |

| **Class : Third Year** | **Division: D11AD** |
| --- | --- |
| **Semester :V** | **Subject:Artificial Intelligence** |
| **Date:** | **Time: 1 hr** |

| **Course Outcome** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** | **CO6** |
| --- | --- | --- | --- | --- | --- | --- |
| **Percentage %** | 13% | 13% | 74% | - | - | - |

| **Q.1** |  | **(Attempt any five of the following)** | **Marks**  **(20)** | **COs** |
| --- | --- | --- | --- | --- |
|  | a) | What is intelligence? How do you measure it? | 2M | CO1 |
|  | b) | List and describe problems faced in Hill Climbing Search? | 2M | CO3 |
|  | c) | What do you mean by Problem formulation. Explain by taking suitable example. | 2M | CO2 |
|  | d) | Differentiate uninformed and informed search strategies.Which one is better and Why? | 2M | CO3 |
|  | e) | Give the initial state, goal test, successor and cost function for 8 queen problem | 2M | CO2 |
|  | f) | Why PEAS is important? Find out PEAS for automated taxi driver. | 2M | CO1 |
| **Q.2** | a) | Explain Alpha Beta search and apply into the given below. | 5M | CO3 |
|  |  | **OR** |  |  |
|  | b) | Define the initial and goal state of three missionaries and cannibals problem. Describe the set of operators using if-then rules.  Draw the entire state space graph (include only legal states, that is, states in which cannibals do not outnumber missionaries on either side of the river) . State best searching algorithm for it | 5M | CO3 |
| **Q.3** | a) | Explain Genetic Algorithm in detail with suitable example. | 5M | CO3 |
|  |  | **OR** |  |  |
|  | b) | Explain a heuristic function for an 8-puzzle problem and solve it using A\* algorithm? | 5M | CO3 |

s