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Total Number of Pages: 02

Course: M.Sc.I
Sub_Code: FBEF714

7th Semester Regular Examination: 2024-25

SUBJECT: ARTIFICIAL INTELLIGENCE

BRANCH(S): M.Sc.I(MC)

Time: 3 Hours

Max Marks: 70

Q.Code: R281

Answer Question No.1 (Part-I) which is compulsory, any five from rest (Part-II)

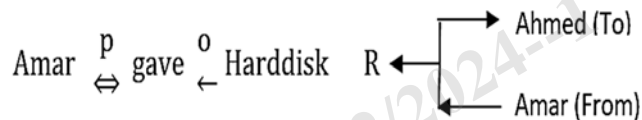
The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions:

(2 x 10)

- Write down the various properties of environment.
- Differentiate between the uninformed and informed search techniques.
- State the significance of using Heuristic functions.
- Write any four applications of Artificial Intelligence.
- Define the term procedural knowledge.
- State the knowledge representation statement of the conceptual dependency given below



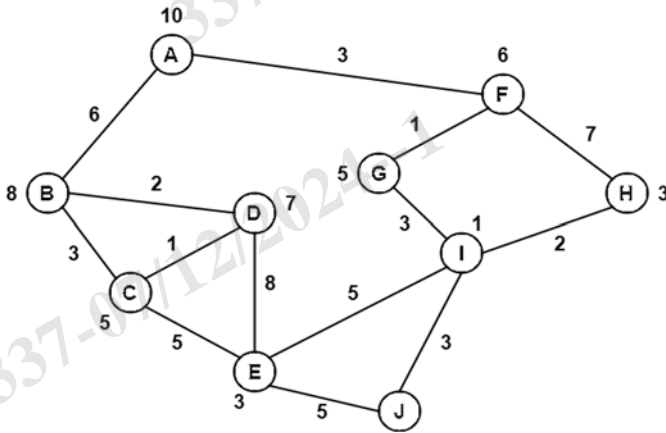
- Define slot-filter knowledge representation in AI.
- State different kinds of planning.
- Differentiate between Forward and Backward chaining.
- Specify characteristics of two AI agents (Human, Robotic).

Part-II

Long Answer Type Questions (Answer Any five)

- Q2**
- Define hill climbing? Explain the problem associate with it and its solution. **(5)**
 - Explain the Minimax Procedure with example. **(5)**
- Q3**
- Explain component of Expert System with a suitable diagram. State the limitations of Expert System. **(5)**
 - Differentiated between scripts and frame structures? **(5)**

- Q4** a) Define Knowledge representation? State the various properties for knowledge representation. (5)
- b) Explain each parameter of heuristic function $(n) = g(n) + h(n)$ in A* searching methodology. Find the minimal path of the graph given below for traveling from A to J considering heuristic and actual cost. (5)



- Q5** a) Define unsupervised Learning. Explain different types of unsupervised Learning. (5)
- b) Differentiated between Knowledge representation and knowledge acquisition. (5)
- Q6** a) Explain non-monotonic reasoning and discuss the logics for non-monotonic reasoning (5)
- b) Solve 8 Puzzle problem by any AI Technique. (5)
- Q7** a) Explain the use of planning graph in providing better heuristic estimation with suitable example. (5)
- b) Compare the contrast propositional logic and first order logic in terms of expressive power and representative capabilities. (5)
- Q8** a) Define Artificial Intelligence. Explain various area of study of Artificial Intelligence. (5)
- b) What are the characteristics of rote learning? Is it good or bad; Justify your answer. (5)