

(b) What is Alpha-Beta Pruning algorithm ?

4

9. What are context free and transformational grammar ? Explain in detail. 10

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2024

ARTIFICIAL INTELLIGENCE

Paper : ITB-HE-6036/IT-6-2

Full Marks : 80

Time : Three hours

The figures in the margin indicate full marks for the questions.

Section-A

Answer **any four**.

1. (a) Fill in the blanks : 1×5=5
 - (i) Father of AI is _____ .
 - (ii) _____ algorithm requires less space. (Linear search/Depth first search)
 - (iii) _____ is the common programming language for AI.
 - (iv) How many types of recognition are there in AI? (5/3/1)

(v) Decision of Victory / Defeat are made in Game tree using _____ Algorithm. (Min / Max / BFS)

(b) State True **or** False : 1×5=5

(i) Learning AI agent is a type of artificial agent.

(ii) B+ is a informed search method.

(iii) Negation is a logical symbol in AI.

(iv) DBMS is an application of AI.

(v) LISP is not used for AI.

2. Define the following terms : 2×5=10

(i) Hill climbing

(ii) Turing test

(iii) Predicate logic

(iv) Production Rules

(v) Artificial Intelligence

3. Write short notes on : **(any four)** 5×4=20

(a) Supervised and unsupervised learning

(b) Knowledge Representation

(c) Parsing Techniques

(d) Production Systems

(e) The Unification Algorithm

Section-B

Answer **any four**.

4. What are the Heuristic Search Techniques? Explain *any one* algorithm briefly. 10

5. (a) Distinguish between fact and predicate. 5

(b) Define NLP. What makes understanding difficult? 5

6. (a) What do you mean by Recursive and Augmented transition nets? 5

(b) What are frames and scripts? 5

7. (a) What is Mean-End Analysis? Explain. 5

(b) What Bayesian Probabilistic Inference? Explain. 5

8. (a) What is generate and test algorithm? Briefly describe steps. 6