

U.G. 6th Semester Examination - 2020**BCA****Course Code : BBCADSHT4****Course Title : Artificial Intelligence**

Full Marks : 40

Time : 2 Hours

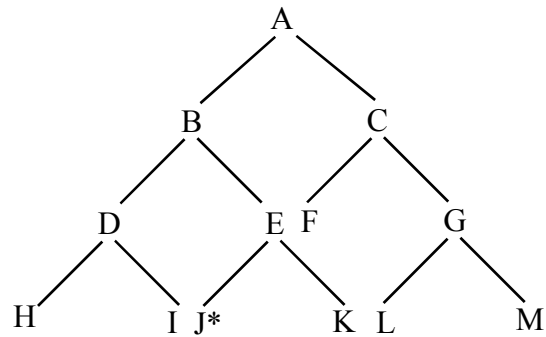
*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** questions: 1×10=10
- i) Write the different syntaxes of FOPL?
 - ii) Define Planning.
 - iii) What are the objectives of AI?
 - iv) Write the time and space complexity of BFS.
 - v) What is computer vision?
 - vi) Name any two unsupervised search methods.
 - vii) Define the term Tautology.
 - viii) What do you mean by term 'atom' in LISP programming?

- ix) Write the names of any two popular Expert Systems.
- x) List two applications of AI.
- xi) What is Induction learning?
- xii) Difference between database and knowledge base.
- xiii) Represent the given fact in predicate logic.
– All reptiles are tetrapod vertebrates.
- xiv) What are the uses of speech understanding?
- xv) Write one advantage of Semantic network.

2. Answer any **five** questions: 2×5=10
- i) Define decision tree Pruning.
 - ii) Write the functions of the following in LISP programming :
(a) cdr (b) zerop
 - iii) Write two differences between BFS and DFS.
 - iv) Define ridge and local maxima in the state space diagram.
 - v) What do you understand by the term Skolemisation?
 - vi) For the search given below, use Breadth first search and list the elements of the queue before

selecting and expanding each state until goal node is reached (Goal states designated with *)



vii) Differentiate between declarative and procedural knowledge.

viii) Define the term fuzzy logic.

3. Answer any **two** questions: 5×2=10

- i) a) Describe well formed formula.
- b) State Resolution Principle. 3+2
- ii) a) Define any one type of Parsing with an example.
- b) Why do we need Parsing. 4+1
- iii) Write the algorithm for AO* search. 5

4. Answer any **one** question: 10×1=10

- i) a) Write any two inference rules of Predicate Logic in details.
- b) Write the steps for conversion to clausal form. 4+6
- ii) a) Define NLU.
- b) Describe the Phases of Natural Language Processing. 2+8
- iii) a) Define Best first Search.
- b) Using search tree given below, list the elements of the queue just before the next node is expanded use best first search where the numbers correspond to estimated cost-to-goal for each corresponding node. 2+8

