CSc. 304-2076 ✡

Tribhuvan University
Institute of Science and Technology
2076
✡

Bachelor Level / Third Year/ Fifth Semester/ Science
Computer Science and Information Technology (CSc.304)
(Artificial Intelligence)

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to give their answers in their own words as for as practicable.
The figures in the margin indicate full marks.

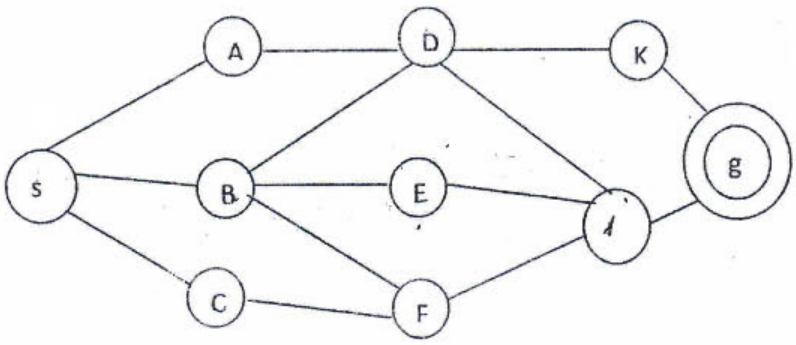
Attempt all questions.

1. How can you define AI from the dimension of rationality? (6)

2 What is intelligent agent? Design PEAS framework for;
   - Soccer playing agent
   - internet shopping assistant (6)

3. Convert following statements into FOPL, every friend of Ramesh has visited Pokhara. Everyone who visits Pokhara does boating on Fewalake.
   Ramesh has done boating on Fewalake. Now using resolution try to infer; some friend of Ramesh has done boating on Fewalake. (6)

4. How iterative deepening search is better than DFS and BFS. Consider following state space, use iterative deepening search considering S as start and g as goal. (2+4)



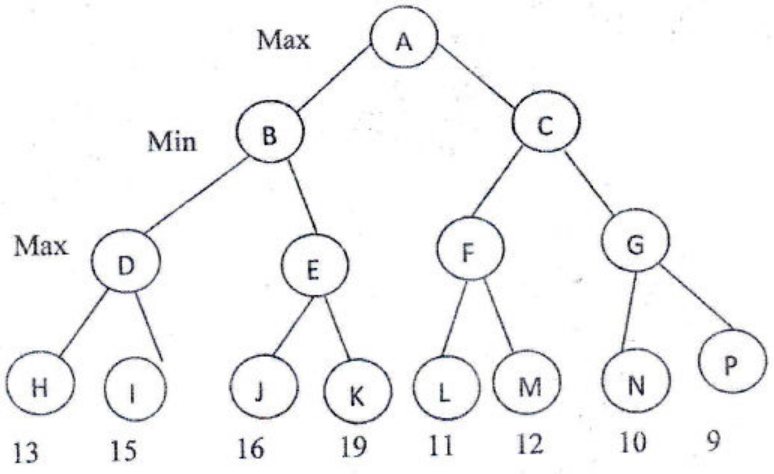
5. What is script? How knowledge is represented in script? Illustrate components of script with a example. (2+2+2)

6. What is machine learning? How genetic algorithm can be used to train agents? Discuss the operations of genetic algorithm. (2+4)

7. Configure a feed-forward neural network with your own assumptions of inputs and weights and express it mathematically. Write an algorithm for training neural networks using allebbian learning. (2+4)

8. What is natural lauguage processing? How morphological analysis is done during the processing? (2+4)

9, Consider a following state space representing a game. Use minimax search to find solution and perform alpha-beta pruning, if it exists. (3+3)



10. How facts in uncertain knowledge are represented? Configue a Bayesian network for following; The probability of having rain is 60%. The chances of getting cold if it will rain is 80%. The probability of not having sunshine is 90%. The probability that it will be hot if it is sunshine is 0.67. (2+4)