

POKHARA UNIVERSITY

Level : Bachelor

Semester – Spring

Year :2020

Program: BE

Full Marks : 70

Course : Artificial Intelligence and Neural Network

Pass Marks: 31.5

Time : 2 hrs.

Candidates are required to answer in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

Section – A: (5×10 = 50)

1. Distinguish among Heuristic search technique against Blind search technique. Express their space and time complexity taking Depth first search and Greedy search in picture. 6+4
2. Explain the importance of Reasoning. In what scenarios are reasoning and its variant useful and effective? Provide appropriate example. 3+4+3

OR

- Describe about the cyclic process of providing a solution based on partial problem description and justify with a suitable example. Also, defend why such process differs from traditional rule-based system. 7+3
3. Write briefly about Semantic net and Frame. Among them, which one is more informative and how? Explain both with appropriate diagrammatic example. 4+3+3
 4. Construct a parse tree for the sentence “*The student graduated from PU*”. Explain the levels of analysis in NLP with reference to this sentence. 10
 5. Briefly explain Proposition logic and Predicate logic. Convert the following sentences into FOPL sentences. 4+6
 - a) Ramesh does not have a laptop.
 - b) Shiva was assassinated at Pokhara.
 - c) Some potatoes are wasted.
 - d) Everyone is helpful to few ones.
 - e) All children like new books.
 - f) All purple mushrooms are venomous.

Section – B: (1×20 = 20)

6. a) Design an 8-Queen problem or Crypto-arithmetic problem as a Problem Solving Agent describing all necessary procedures and components. 10
- b) In two player games like Tic-Tac-Toe, MiniMax Algorithm performs efficiently however, in a higher depth games like Chess, the algorithm fails in efficiency. Justify. Also, solve the following game tree and find alpha and beta cutoff. 6+4

