POKHARA UNIVERSITY

Level: Bachelor | Semester – Fall | Year : 2012
Programme: BE | Full Marks: 100
Course: Artificial Intelligence and Neural Network | Pass Marks: 45
Time : 3hrs.

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

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) How can we formulate a problem? Formulate the water-jug problem. 6
   b) What is the role of planning in problem solving? Point out the problem in linear planning using the example of the Sussman anomaly. 9

2. a) Define Artificial Intelligence. What capabilities must a machine possess to be called it as intelligent? Explain. 7
   b) What are the drawbacks of propositional logic? Let us consider there are two restaurants A and B. A has a signboard saying "good food are not cheap" and B has a signboard saying "cheap food are not good". Are both restaurants saying same thing? 8

3. a) Let us consider we have following facts about Kabita: 8
      i. Kabita likes only easy courses.
      ii. All science courses are hard.
      iii. All arts courses are easy.
      iv. A101 is an arts course.
      v. S202 is a science course.

      Use the resolution to answer the question: - which course does Kabita like?
   b) With an example explain the mini-max procedure. Why is the mini-max procedure inefficient? How can it be made efficient? Explain. 7

4. a) Why do we need to reason on uncertainty? What is a Bayesian network? Explain with an example. 7
   b) Define concept learning. Discuss about the Winston learning with example. 8

5. a) Describe about learning by analogy with example. 7

   b) Define Artificial Neural Network. Describe the structure and learning algorithm of Adaline. 8

6. a) Describe the basic architecture of expert system. 7
   b) Describe the basic steps in natural language processing. Draw a parse tree for a sentence: I want to print a page. 8

7. Write short notes on **any two:** 2×5
   a) Semantic Net
   b) Genetic Algorithm
   c) Knowledge Acquisition