

POKHARA UNIVERSITY

Level: Bachelor
 Programme: BE
 Course: Artificial Intelligence and Neural Networks

Semester: Spring

Year : 2019
 Full Marks: 100
 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 forward and backward reasoning assist in reasoning? 7
 Support with appropriate example.
- b) What is turing test? Express your views on "can we make a computer exactly like human". Why or why not. 8
2. a) In how many ways knowledge can be represented? Describe knowledge representation based on Network scheme. 8
- b) What do you mean by state-space representation of a problem, explain with example. 7
3. a) Convert the following sentences into FOPL sentences. 7
 - i. Bryan eats mushroom and is still alive.
 - ii. Elly is not married.
 - iii. Joy is married to Saleh.
 - iv. Billy is Elly's brother.
 - v. All the courses in the engineering are hard.
 - vi. CMP911 is a computer course.
 - vii. Dummy is not fat.
- b) Define machine learning. Explain Genetic algorithm with a flowchart. 8
4. a) What are different types of Feed-forward network? Support strength and weakness of its various types. 7
- b) Explain how a neural network can be trained using back propagation algorithm. 8
5. a) Differentiate between procedural and declarative knowledge with examples. List out some knowledge acquisition techniques. 7
- b) What do you mean by expert system? Explain different components with its architecture. 8
6. a) How can you make a system capable of communication in Nepali language? What challenges might you encounter? 7

- b) Describe Natural Language Processing? Write about different levels of Analysis in NLP. 8
7. Write short notes on: (Any two) 2×5
- a) Linear programming
 - b) Bayesian Networks
 - c) Hopfield network