Tribhuvan University

Institute of Science and Technology

2067

Bachelor Level/ Third Year/ Fifth Semester/ Science   Full Marks: 60

Computer Science and Information Technology (CSc. 304)   Pass Marks: 24

(Artificial Intelligence)   Time: 3 hours

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. (10x6=60)

1. Define Artificial Intelligence (AI). Explain the behaviors of the AI. What do you mean by Turing Test?

   Explain it.

2. Why disjunctive normal form is required? Explain all the steps with examples.

3. "A person born in Nepal, each of whose parents is a Nepali citizen by birth, is a Nepali citizen by birth. A person born outside Nepal, one of whose parents is a Nepali citizen by birth, is a Nepali citizen by decent. Several developed countries have dual citizenship provision, but Nepal doesn't have that provision." Represent the above sentences in first-order logic and explain each step.

4. Differentiate between inference and reasoning. Why probabilistic reasoning is important in the AI? Explain with an example.

5. Justify that searching is one of the important part of AI. Explain in detail about depth first search and breadth first search techniques with an example.

6. Define Learning. Why learning frame work is required? Explain about learning frame with block diagram and examples.

7. What is Bayes' theorem? Explain its applications.

8. What is back propagation? Explain all the steps involved in the back propagation with an example.

9. How can you construct expert system? Explain knowledge engineering with a block diagram.

10. Define natural language processing. Explain the different issues involved in the natural language processing.