[26]

SARDAR PATEL UNIVERSITY
B.SC. (CA & IT) SIXTH SEMESTER (CBCS) EXAMINATION-2022
US06CIIT25 - ARTIFICIAL INTELLIGENCE
24-6-2022, Friday

Time: 10:00 AM to 12.00 PM   Marks: 70

Q.1   Multiple Choice Questions   [10]

1. Perception is a _____ type of task.
   a) Mundane Task   b) Formal Task
   c) Expert Task   d) None
2. The process of selection of rule from the conflict set on some predefined criteria, is called

   _____.
   a) inference engine   b) conflict set
   c) conflict resolution   d) none
3. Common sense reasoning is a _____.
   a) Mundane Task   b) Formal Task
   c) Expert Task   d) None
4. _____ is known as automatic learning or machine learning.
   a) expert-learning   b) self-updates
   c) self-learning   d) none
5. A _____ is a knowledge representation structure for a specific situation.
   a) frame   b) production rules
   c) script   d) none
6. _____ maps elements of a fuzzy set to real numbered values in the interval 0 to 1.
   a) Fuzzy Logic   b) Bi-valued Logic
   c) Membership Function   d) none
7. The process of transforming the crisp value into a Linguistic values is called _____.
   a) Fuzzification   b) Defuzzification
   c) normalization   d) inference
8. In _____ network, the input fed to the network propagates in forward direction only.
   a) feed backward   b) feed forward
   c) recurrent   d) none
9. The principle of Genetic Algorithm is based on _____.
   a) Survival of fittest   b) Blind Search
   c) Genotype   d) Mutation
10. The degree of _____ is referred to the strength of the genes in an individual.
    a) weakness   b) fitness
    c) Stored program concept   d) None

Q.2   Fill in the Blanks and True or False.   [08]

1. Computer-based Games is a _____ task.
2. The quantification symbol for universal quantification is _____.
3. PNN stands for _____.
4. _____ is a collection of such genes representing possible solutions in domain space.
5. The classic example of Heuristic search methods is the Travelling Salesman Problem. [T / F]
6. Predicates are special functions that return only Boolean values. [T / F]
7. The learning rule of perceptron is also known as Delta rule. [T / F]
8. A schema is a template, defined over the alphabet {0,1,*},which describes a pattern of bit strings in the search space {0,1}/length. [T / F]

Q.3 Answer the following questions. (Any ten) [20]

1. Explain Turing Test.
2. Explain the following terms:
   a. Wisdom and intelligence
   b. Expert system
3. List the components of KBS with diagram.
4. Draw the diagram for development methodology for a knowledge-based system.
5. Explain the following terms:
   a. Knowledge engineer
   b. Protocol analysis
6. Which are the users and tools of KBS?
7. Write the Characteristics of Fuzzy logic.
8. What is Artificial Neural Networks (ANN)?
9. List Fuzzy Propositions.
10. Define Chromosomes and Genotype.
11. What are Steps of Genetic cycles?
12. Define Schema. Give importance of schema results.

Q.4 Answer the following questions. (Any Four) [32]

1. Draw the figure of general structure of KBS and explain in detail.
2. Explain data pyramid in detail.
3. Explain the techniques for knowledge acquisition in KBS.
4. Write a note on factual knowledge in detail.
5. Explain the categories of Neural Networks according to their structure and layers.
6. Explain Fuzzy Rules in detail.
7. Explain Basic Operators of Genetic Algorithms.
8. Explain Function Optimization with example.

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