BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: B.TECH   SEMESTER: III
BRANCH: CSE/EEE/IT/ECE   SESSION : MO/2019

SUBJECT : IT201 BASICS OF INTELLIGENT COMPUTING

TIME: 2:00 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates may attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.

Q1 (a) Explain what do mean by artificial intelligence? Identify the capabilities of an AI based   [2]
          system for solving complex problems.
     (b) Considering a suitable example prepare the desired performance, environment,   [3]
          actuators and sensors (PEAS) measures for any one AI based system for problem solving.

Q2 (a) Define an AI agent and appraise when we can say an agent to be rational.   [2]
     (b) Define soft computing and identify the different paradigms of soft computing mentioning   [3]
          their problem solving capabilities.

Q3 (a) Differentiate between fuzzy and crisp set. Defend the following statement: [2]
          "Partial membership is allowed in fuzzy sets"?
     (b) Consider two given fuzzy sets   [3]
          A={(2,1), (4,0.3), (6,0.5), (8,0.2)}
          B={(2,0.5), (4,0.4), (6,0.1), (8,1)}
          Evaluate union, intersection, difference, complement, algebraic sum and algebraic
          product over fuzzy sets A and B.

Q4 (a) With a neat flowchart, illustrate the steps of a simple genetic algorithm.   [2]
     (b) Distinguish between crossover and mutation operation in genetic algorithm.   [3]

Q5 (a) With a neat sketch, explain the working of Mc-Culloh Pitts neuron model.   [2]
     (b) Explain the salient features of artificial learning? Indicate an overview on different types   [3]
          of learning.

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