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Question Paper Code: 2056158

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024

Sixth Semester

Information Technology

IT8601 – COMPUTATIONAL INTELLIGENCE

(Regulation 2017)

Time: Three Hours

Maximum: 100 Marks

Answer ALL questions

PART – A

(10 x 2 = 20 Marks)

1. List the characteristic features of expert system.
2. State the point of view of alpha-beta pruning.
3. Define ontology.
4. Difference between declarative and procedural language.
5. What are the ways in which one can understand the semantics of a belief network?
6. Give the examples for non-monotonic reasoning.
7. Define Bayes theorem. Give the Bayes rule equation.
8. Organize the key features of reinforcement learning.
9. Identify the components of Natural language processing.
10. Sketch the basic definition of top down parse.

PART – B

(5 x 13 = 65 Marks)

11. (a) Explain about the rule based system with examples. (13)

(OR)

- (b) Define A\* search algorithm. Explain the admissibility of A\* algorithm. (13)

12. (a) Describe Unification algorithm in brief with an example. (13)

(OR)

(b) Describe briefly about Ontological Engineering. (13)

13. (a) Write a note on fuzzy logic. How do it uses for probabilistic reasoning. (13)

(OR)

(b) State the factors that influencing back propagation neural network. (13)

14. (a) Describe briefly about the Regression and Classification with Linear Models. (13)

(OR)

(b) Identify the various types of Reinforcement Learning Techniques. (13)

15. (a) Explain briefly on implementation aspects of syntactic analysis. (13)

(OR)

(b) Describe about NLP? Write in details about various application of NLP. (13)

PART – C

(1 x 15 = 15 Marks)

16. (a) With the help of diagram, explain the training algorithm of Back propagation networks and discuss how the various parameters are chosen for training the neural net? (15)

(OR)

(b) Construct the Bayesian network and define the necessary CPTs for the given scenario we have a bag of three biased coins a, b and c with probabilities of coming up heads of 20%, 60% and 80% respectively. One coin is drawn randomly from the bag (with equal likelihood of drawing each of the three coins) and then the coin is flipped three times to generate the outcomes X1, X2 and X3. (15)

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