Code No: 138CY



## **Time: 2 Hours**

## **Answer any Five Questions All Questions Carry Equal Marks** - - -

Max. Marks: 75

## 1.a) Will the CANDIDATE-ELIMINATION algorithm converge to the correct hypothesis? Justify your answer.

- Define the boundary sets general boundary G, specific boundary S. b) [8+7]
- 2.a) What is the representational power of perceptron? Explain the training rule of perceptron.
- How to estimate hypothesis accuracy? b) [8+7]
- 3.a) Illustrate Bayes optimal classification.
- Describe the significance of conditional independence in Bayesian belief networks.[7+8] b)
- Provide implementation for LEARN-ONE-RULE, a general-to-specific beam search. 4.a)
- Compare dynamic programming with reinforcement learning. b) [7+8]
- 5. Discuss how explanation is used to distinguish the relevant features of the training example from the irrelevant. Give illustrations. [15]
- 6. Construct a decision tree for the following training data and use entropy as a measure of impurity. [15]

Age	income	Student	credit_rating	buys_computer
<=30	high	No	Fair	no
<=30	high	No	excellent	no
3140	high	No	Fair	yes
>40	medium	No	Fair	yes
>40	low	Yes	Fair	yes
>40	low	Yes	excellent	no
3140	low	Yes	excellent	yes
<=30	medium	No	Fair	no
<=30	low	Yes	Fair	yes
>40	medium	Yes	Fair	yes
<=30	medium	Yes	excellent	yes
3140	medium	No	excellent	yes
3140	high	Yes	Fair	yes

- 7.a) What set of functions can be represented by feedforward networks? Give examples.
- Explain the procedure to estimate the difference in error between two learning methods L<sub>A</sub> b) and L<sub>B</sub>. [8+7]
- Explain about K-nearest nighbour algorithm. 8.a)
  - Describe case based reasoning system with an example. WWW.MANAYESUITS.CO.IN b) [8+7]

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