

Code No: V3226

R07

Set No: 1

III B.Tech. II Semester Supplementary Examinations, April/May – 2013

ARTIFICIAL INTELLIGENCE AND NEURAL NETWORKS

(Computer Science and Engineering)

Time: 3 Hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. a) What are the different AI problems? [6M]
b) How can you say AI is used for problem? Explain with an example. [10M]
2. a) Write the algorithm for depth First Search with an example. [8M]
b) What are optimal strategies? Write minmax algorithm. [8M]
3. a) Write a knowledge based agent program. [8M]
b) What is meant by Wumpus world? How is it related with sensors? [8M]
4. a) Write simple forward-chaining algorithm. [8M]
b) Explain the basic structure of a completeness problem for resolution. [8M]
5. a) Compare LMS, perception and delta learning laws. [8M]
b) Compare the performance of computer and Biological Neural networks. [8M]
6. a) Discuss a few tasks that can be performed by a back propagation network. [8M]
b) Summarize the results of Linear Associative Networks. [8M]
7. a) Explain the Linear auto associative feed forward network. [8M]
b) What is meant by stochastic update of a neuron? Explain. [8M]
8. a) Explain the self-organizing feature map learning. [8M]
b) What is an instar network and discuss its application. [8M]



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Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. a) What is an agent? How can an agent interact with environments? [8M]
b) Explain task environment with an example. [8M]
2. a) What is meant by depth limited search? How it is related to depth first search. [8M]
b) What are the distinct problem types with searching with partial information? [8M]
3. a) Write the resolution algorithm. [8M]
b) Write about forward and backward chaining. [8M]
4. a) Explain the models for first-order logic. [8M]
b) Consider a knowledge base containing just two sentences: p(a) and p(b). Does this knowledge base entail $\forall x p(x)$? Explain your answers in terms of model. [8M]
5. a) Explain three classical models for an artificial neuron. [8M]
b) What is the distinction between learning equation and learning law? [8M]
6. a) Summarize the issues in perception learning. [8M]
b) What is perception learning for pattern classification? Explain. [8M]
7. a) What is a hard problem in pattern storage task? [8M]
b) What is a state Transition diagram for a feedback network? Explain how to design it for a given networks. [8M]
8. a) What are components of complete learning networks? [8M]
b) Explain feed forward and feed backward structure. [8M]



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Set No: 3

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ARTIFICIAL INTELLIGENCE AND NEURAL NETWORKS

(Computer Science and Engineering)

Time: 3 Hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. a) Explain the algorithm of a simple reflex agent with diagram. [8M]
b) What are the properties of task environment? Explain. [8M]
2. a) What are different ways for measuring problem-solving performance? Explain. [8M]
b) Explain general tree search algorithms. [8M]
3. a) What is conjunctive normal form? How CNF is related to unit resolution. [8M]
b) What is meant by completeness of resolution? Explain. [8M]
4. a) Is the sentence $\exists x, y \ x=y$ valid? Explain. [8M]
b) Explain the steps in knowledge engineering process. [8M]
5. a) What are the main difference among the three models of artificial neuron Mcculloh-pills, perception and adalni? [8M]
b) What are the basic learning laws? Explain. [8M]
6. a) Summarize the Basic Gradient search methods. [8M]
b) Explain the limitations of Back Propagation learning. [8M]
7. a) Explain pattern Recognition task by feedback neural networks. [8M]
b) What is Hop field model? Explain. [8M]
8. a) What is pattern clustering networks and discuss its applications? [8M]
b) What is associative memory and discuss its features? [8M]



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Set No: 4

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ARTIFICIAL INTELLIGENCE AND NEURAL NETWORKS

(Computer Science and Engineering)

Time: 3 Hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. a) Explain the general model of learning agents. [8M]
b) Differentiate between Model-based agents and Goal based agents. [8M]
2. a) Write the algorithm for Breadth First Search with example. [8M]
b) What is meant by uniform-cost search? How it is relate to Breadth First search? [8M]
3. a) Explain the reasoning patterns in propositional logic. [8M]
b) How can you represent the BNF grammar of sentence in propositional logic? [8M]
4. a) State the difference between propositional and first order inference. [8M]
b) Write the Unification algorithm. [8M]
5. a) Identify Supervised and Unsupervised basic learning laws. [8M]
b) Explain the characteristics of neural networks. [8M]
6. a) Explain the difference between learning and delta learning. [8M]
b) Why back propagation learning is also called generalized delta rule? [8M]
7. a) What is meant by capacity of a feedback network? [6M]
b) Distinguish between auto association, pattern storage and pattern environment storage tasks. Give example for each task. [10M]
8. a) Explain the Analysis of pattern clustering networks. [10M]
b) Explain the competitive learning. [6M]
