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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY-JUNE 2014

Paper Code: BCA-312	Subject: Artificial Intelligence (Batch 2011 Onwards)
Time: 3 Hours	Maximum Marks: 75

Note: Attempt five questions including Q.no.1 which is compulsory. Select one question from each Unit.

Q1 (a) What are the issues in the design of the search problem? **(10x2.5=25)**
(b) Distinguish between Predicate and Propositional logic.
(c) What are the limitations in using propositional logic to represent the knowledge base?
(d) Define frame. Give one example of a simplified frame system.
(e) State the use of Unification.
(f) Define Inductive learning.
(g) Explain the concept of 'learning from example'.
(h) What is Syntactic processing?
(i) Discuss briefly the component of generic expert system.
(j) Define 'Expert system shells'.

Unit-I

Q2 (a) What is an AI technique? Discuss AI and its related fields. **(6)**
(b) Write an algorithm for Depth first search and Breadth first search. What is the advantage of one over the other? **(4)**
(c) Define Heuristic search. **(2.5)**

Q3 (a) Explain AO* algorithm with example. **(10)**
(b) Define Constraint satisfaction. **(2.5)**

Unit-II

Q4 (a) Describe mapping between facts and representation. Give examples also. **(6)**
(b) Write algorithm for Property inheritance with respect to Inheritable knowledge. **(6.5)**

Q5 (a) Discuss the issues of 'Granularity of Representation' in knowledge representation. **(4)**
(b) Explain 'Unification Algorithm' used for reasoning under predicate logic. **(8.5)**

Unit-III

Q6 Discuss Discourse and Pragmatic processing. Explain with example. **(12.5)**

Q7 (a) Write short note on:- **(12.5)**
(i) Learning by Parameter Adjustment
(ii) Learning by Macro Operators
(iii) Learning by Chunking

Unit-IV

Q8 How is an Expert system built? How is the expert knowledge extracted efficiently? Discuss one of the knowledge acquisition system for Heuristic classification problems. **(12.5)**

Q9 (a) Write a program in any AI programming language to find the maximum integer from a list of integer elements. **(6.5)**
(b) Write a program in any AI programming language to find the perimeter of a circle. **(6)**

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY- JUNE 2015

Paper Code: BCA-312 ***Subject: Artificial Intelligence***

BATCH- 2011 Onwards

Time: 3 Hours ***Maximum Marks: 75***

Note: Attempt any five questions including Q.No 1 which is compulsory.

Q1 Answer the following questions:- **(10x2.5=25)**

(a) What is AI? Mention application of AI.
(b) Name the two kinds of synchronous rules that allow deductions.
(c) State the reasons why the inductive logic programming is popular.
(d) What is constraint satisfaction?
(e) What is Heuristic Search?
(f) Define Expert System Shell.
(g) Discuss the advantages of Decision support systems.
(h) How does alpha beta pruning technique works?
(i) What is local minima problem?
(j) Distinguish between Predicate and Propositional logic

Q.2 (a) "AI is both a science and a field of engineering" Discuss with the help of an example. **(6.25)**

(b) Explain Tic-Tac-toe problem **(6.25)**

Q.3 Explain the following search algorithms:

(a) Depth first search **(6.25)**
(b) AO* **(6.25)**

Q.4 (a) Illustrate the use of first-order-logic to represent the knowledge. **(7.5)**

(b) Describe mapping between facts and representation. **(5)**

Q.5 (a) Differentiate between Inheritable knowledge and Inferential Knowledge? **(7.5)**

(b) Discuss Inheritable knowledge by applying the steps to real world application of your choice. **(5)**

Q6 (a) Explain syntactic processing **(6.25)**

(b) Differentiate between syntactic process and semantic processing. **(6.25)**

Q7 Write short note on the following:- **(2x6.25=12.5)**

(a) Explanation Based Learning
(b) Learning by analog

Q8 Write short notes on the following **(any two)**:- **(2x6.25=12.5)**

(a) Expert system
(b) Concept of uncertainty in Expert system
(c) LISP Programming

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY JUNE 2017

Paper Code: BCA-312 **Subject: Artificial Intelligence**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt any five questions including Q.no. 1 which is compulsory. Select one question from each unit.

Q1 (a) What is Artificial Intelligence (AI)? Enumerate its popular definitions comment upon each.
(b) Compare Depth-First and Breadth-First Search.
(c) Write short note on concept of uncertainty in Expert system.
(d) What are the merits and demerits of semantic net over semantic frames?
(e) Write short note on Rote learning. **(5x5=25)**

UNIT-I

Q2 (a) What is a State Space Search? Give any example of a game which happens to be a problem of state space search and justify your answer properly. **(6.5)**
(b) What is production system? Discuss requirements of good control strategy. **(6)**

Q3 (a) Write algorithm for "Hill Climbing" and explain the terms Local maximum, Plateau and ridge. **(6)**
(b) Explain A * algorithm in detail with an example. **(6.5)**

UNIT-II

Q4 Consider the following sentences:- **(12.5)**
(a) John likes all kinds of food.
(b) Apples are food.
(c) Chicken is food.
(d) Anything anyone eats and isn't killed by is food.
(e) Bill eats peanuts and is still alive.
(f) Sue eats everything Bill eats.
Based on above, do the following:
1. Translate these sentences into formulas in predicate logic.
2. Prove that John likes peanuts using backward chaining.
3. Convert the formulas of part 1 into clause form.
4. Prove that John likes peanuts using resolution.

Q5 (a) What is knowledge representation? What are various techniques used for knowledge representation? Discuss significance of each. **(7)**
(b) Differentiate between forward and backward reasoning. **(5.5)**

UNIT-III

Q6 (a) Write short notes on Learning by Parameter Adjustment and Explanation based Learning. **(7)**
(b) Differentiate between syntactic processing and semantic processing. **(5.5)**

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY JUNE 2018

Paper Code: BCA-312 Subject: Artificial Intelligence

Time: 3 Hours Maximum Marks: 75

Note: Attempt five questions in all including Q.no.1 which is compulsory. Select one question from each unit.

Q1 Write short notes (Any five):- (5x5=25)

(a) Heuristic Approach
(b) Task domain
(c) Expert System
(d) Hill Climbing
(e) Role Learning
(f) Robotic Architecture
(g) DFS (Depth First Search)

UNIT-I

Q2 (a) What is the importance of Artificial Intelligence? Describe it. (6.5)
(b) Discuss issues in design of search program. (6)

Q3 (a) Explain the various categories of Production System. (6)
(b) What are the elements of AI? Discuss various Application areas of AI. (6.5)

UNIT-II

Q4 (a) What are the qualities of a good Knowledge Representation System? (6)
(b) What is predicate logic? How Knowledge Representation can be achieved using predicate logic? Illustrate. (6.5)

Q5 (a) Differentiate between Inheritable Knowledge & Inferential Knowledge. (6)
(b) Describe mapping between facts & representation. (6.5)

UNIT-III

Q6 (a) Describe Natural Language Processing. Explain various types of NLP techniques. (6)
(b) What is learning? Explain how learning is helpful for AI? (6.5)

Q7 (a) Comparison between Syntactic Processing & Semantic Processing. (6.5)
(b) Explain discourse & pragmatic processing. (6)

UNIT-IV

Q8 Why LISP is considered to be appropriate language for AI technique? Write a LISP program to print factorial of a given number. (12.5)

Q9 What is Expert System? What are the characteristics of a good Expert System? Explain MYCIN expert system. (12.5)

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