MIDTERM EXAMINATION  
Spring 2011  
CS607- Artificial Intelligence  

Question No: 1  (Marks: 1) - Please choose one  
Breadth-first search is a good idea when you are confident that the branching factor is_____  
► Extremely small  
► Small  (Artificial Intelligence, 3/E)  Click here for detail  
► Medium  
► Large  

Question No: 2  (Marks: 1) - Please choose one  
Another expert system named__________ was developed by Digital Equipment Corporation, as a computer configuration assistant.  
► R1/XCON  (Page 112)  
► MYCIN  
► Dendral  
► R3/XCON  

Question No: 3  (Marks: 1) - Please choose one  
An AI system must form a meaningful and useful ____________ of the internal information.  
► Representation  (Page 89)  
► Execution  
► Learning  
► Planning
Question No: 4 (Marks: 1) - Please choose one
An AI system has a __________ component that allows the system to get information from its environment.

► Planning
► Perception (Page 89)
► Learning
► Execution

Question No: 5 (Marks: 1) - Please choose one
Progressive deepening guarantees to find the solution at a minimum depth like
► DFS
► BFS (Page 37)
► None

Question No: 6 (Marks: 1) - Please choose one
In Adversarial search the goals of the adversaries are usually __________ to each other
► Contrary (Page 62)
► Same
► None

Question No: 7 (Marks: 1) - Please choose one
Which Cycle does the following figure show?

► AI Cycle (Page 89)
► Design Cycle
► SDLC
► None
Question No: 8 (Marks: 1) - Please choose one
To infer new information from semantic networks, we can ask questions from nodes.

► True (Page 97)
► False

Question No: 9 (Marks: 1) - Please choose one
Which one is not the application area of expert system?

► Diagnosis
► Prescription
► Interpretation
► None (Page 114)
Ref: - Expert systems may be used in a host of application areas including diagnosis, interpretation, prescription, design, planning, control, instruction, prediction and simulation.

Question No: 10 (Marks: 1) - Please choose one
An expert system is different from conventional programs in the sense that program control and knowledge are __________.

► Separate (Page 121)
► Defined
► Together
► Common

Question No: 11 (Marks: 1) - Please choose one
Which one of the following is involved in an ES development project:

► The domain expert
► The knowledge engineer
► The end user
► All of the given (Page 122)

Question No: 12 (Marks: 1) - Please choose one
Semantic networks are computationally expensive at __________

► Run time (Page 97)
► Compile Time
► Start Time
► End Time
Question No: 1  (Marks: 1) - Please choose one
We can get optimal solution given some parameters using Genetic Algorithm.

► True  (Page 79)
► False

Question No: 2  (Marks: 1) - Please choose one
___________ reasoning is based on forming, or inducing a ‘generalization’ from a limited set of observations.

► Deductive
► Abductive
► Analogical
► Inductive  (Page 102)

Question No: 3  (Marks: 1) - Please choose one
_______ is the process of deriving logical conclusions from given facts.

► Representation
► Execution
► Reasoning  (Page 102)
► Planning

Question No: 4  (Marks: 1) - Please choose one
Identify the correct step used to start design of an expert system.
► Feasibility study  (Page 129)
► Problem reorganization
► Scope study
► Rapid prototyping

Question No: 5  (Marks: 1) - Please choose one
Inductive learning is based on the knowledge that if something happens a lot it is likely to be generally

► True  (Page 160)
► False
► Ambiguous
► None of the given
Question No: 6  (Marks: 1)  - Please choose one
If the antecedent is only partially true, then the output fuzzy set is truncated according to the ________ method

► Intrinsic
► Implication  (Page 153)
► Boolean
► None of the given

Question No: 7  (Marks: 1)  - Please choose one
Choose the fields in which Fuzzy inference systems have been successfully applied:

► automatic control
► data classification
► decision analysis
► All of the given  (Page 153)

Question No: 8  (Marks: 1)  - Please choose one
Usually a ________ graph is chosen to represent a fuzzy set.

► Triangular  (Page 151)
► Circular
► Conical
► None of the given

Question No: 9  (Marks: 1)  - Please choose one
Fuzzy logic is actually a superset of conventional Boolean logic

► TRUE  (Page 150)
► FALSE

Question No: 10  (Marks: 1)  - Please choose one
Reasoning in fuzzy logic is just a matter of generalizing the familiar ________ logic.

► Boolean  (Page 147)
► Complex
► Coagnitive
► Supervised

Question No: 11  (Marks: 1)  - Please choose one
A classical set is a container, which wholly includes or wholly excludes any given element.

► TRUE  (Page 145)
► FALSE
Question No: 12 (Marks: 1) - Please choose one
The degree of truth that we have been talking about is specifically driven out by a function called the _________ function.

► Membership (Page 149)
► Ordinary
► Fuzzy
► Inline

Question No: 13 (Marks: 1) - Please choose one
The tractable problems are further divided into structured and _______ problems

► Non-structured
► Complex (Page 166)
► Simple

Question No: 14 (Marks: 1) - Please choose one
If the antecedent is only partially true, then the output fuzzy set is truncated according to the _________ method

► Intrinsic
► Implication (Page 153)
► MSE stands for
► Mean Square Error

MIDTERM EXAMINATION
Spring 2010
CS607 - Artificial Intelligence (Session - 1)

Question No: 1 (Marks: 1) - Please choose one
“The branch of computer science that is concerned with the automation of intelligent behavior” this definition is from:

► Luger and Stubblefield (Page 8)
► Winston
► Schalkoff
► Bellman
Question No: 2 ( Marks: 1 ) - Please choose one
Searching is a formal mechanism to explore
► Alternatives (Page 21)
► Recursive
► Best
► Fitness

Question No: 3 ( Marks: 1 ) - Please choose one
In Artificial Intelligence GA stands for Genetic Algorithms
► True (Page 77)
► False

Question No: 4 ( Marks: 1 ) - Please choose one
------------------ is based on forming, or inducing a ‘generalization’ from a limited set of observations
► Inductive reasoning (Page 102)
► Deductive reasoning
► Analogical reasoning
► Common-sense reasoning

Question No: 5 ( Marks: 1 ) - Please choose one
“A computer program designed to model the problem solving ability of a human expert” is known as ---
► Expert system (Page 111)
► Intelligent System
► Echo System
► Energy System

Question No: 6 ( Marks: 1 ) - Please choose one
An expert system may replace the expert or assist the expert
► True (Page 113)
► False

Question No: 7 ( Marks: 1 ) - Please choose one
A ---------------- is ‘A person who possesses the skill and knowledge to solve a specific problem in a manner superior to others’
► The domain expert (Page 122)
► The knowledge engineer
► The end user
► All of the given
Question No: 8 (Marks: 1) - Please choose one
Hill Climbing is basically a ------------ with a measure of quality that is assigned to each node in the tree.

► Depth First Search  (Page 39)
► Breadth First Search
► Best First Search
► Beam Search

Question No: 9 (Marks: 1) - Please choose one
----------- are closely coupled components; each is intrinsically tied to the other.
i-Knowledge representation
ii-Reasoning
iii-Planning
iv-Execution
► ii & iii
► ii & iii
► iii & iv
► i & ii  (Page 89)

Question No: 10 (Marks: 1) - Please choose one
Every graph can be converted into a tree
► True  (Page 22)
► False

Question No: 11 (Marks: 1) - Please choose one
Which one of the problem is more subtle, and consequently, is more frustrating:

► Foothill problem
► Plateau
► Ridge  (Artificial Intelligence, 3/E)  click here for detail
► Box
Question No: 1 (Marks: 1) - Please choose one
Most of the solution spaces for problems can be represented in a ________
► Graph (Page 21)
► Table
► Demo

Question No: 2 (Marks: 1) - Please choose one
By getting grips on __________ that deal with searching techniques in graphs and trees, problem solving can be performed in an efficient manner.
► Pseudocode
► Algorithms (Page 21)
► Charts
► Graphs

Question No: 3 (Marks: 1) - Please choose one
Every graph can be converted into a tree.
► True (Page 22)
► False

Question No: 4 (Marks: 1) - Please choose one
In Breadth First Search the node with the largest value of height will be at the ________ priority to be picked.
► Maximum (Page 28)
► Minimum
► None of the given

Question No: 5 (Marks: 1) - Please choose one
Breadth-First Search checks all paths of a given length before moving on to any longer paths.
► True Click here for detail
► False
Question No: 6  (Marks: 1) - Please choose one
Breadth-first search is a good idea when you are confident that the branching factor is _________
► Extremely small
► Small (Artificial Intelligence, 3/E)
► Medium
► Large

Question No: 7  (Marks: 1) - Please choose one
The foothill problem occurs whenever there are__________ peaks.
► High
► Secondary (Artificial Intelligence, 3/E)
► Primary
► Deep

Question No: 8  (Marks: 1) - Please choose one
The Plateau problem comes up when there is a mostly flat area __________ the peaks.
► Separating (Artificial Intelligence, 3/E)
► Joining
► Over
► None of the given

Question No: 9  (Marks: 1) - Please choose one
Which one of the problem is more subtle, and consequently, is more frustrating:
► Foothill problem
► Plateau
► Ridge (Artificial Intelligence, 3/E)
► Box

Question No: 10  (Marks: 1) - Please choose one
The paths found by best-first search are likely to be __________ than those found with other methods.
► None of the given
► Shorter (Artificial Intelligence, 3/E)
► Longer

Question No: 11  (Marks: 1) - Please choose one
In Basic Genetic Algorithm the term mutation refers to a small random _________.
► Number
► Change (Page 77)
► Operator
► Operand
Question No: 12  (Marks: 1) - Please choose one
Which of the following two components are closely coupled and each is intrinsically tied to the other.
   i. Knowledge representation
   ii. Reasoning
   iii. Execution
   iv. Planning

► i & iii
► ii & iii
► iii & iv
► i & ii (Page 89) rep

Question No: 13  (Marks: 1) - Please choose one
Semantic networks are graphs, with nodes representing ____________ and arcs representing ____________ between objects.

► objects, relationships (Page 97)
► relationships, distance
► objects, distance
► distance, relationships

Question No: 14  (Marks: 1) - Please choose one
A proposition is the statement of a ________.

► Fact (Page 98)
► Equation
► Action
► Theorem

Question No: 15  (Marks: 1) - Please choose one
___________ reasoning is based on forming, or inducing a ‘generalization’ from a limited set of observations.

► Deductive
► Abductive
► Inductive (Page 102) rep
► Analogical

Question No: 16  (Marks: 1) - Please choose one
An ____________ is “A computer program designed to model the problem solving ability of a human expert.”

► Expert system (Page 111) rep
► Intelligent System
► Echo System
► Energy System
Question No: 17  (Marks: 1) - Please choose one
Another expert system named __________ was developed by Digital Equipment Corporation, as a computer configuration assistant.
► R1/XCON  (Page 112)
► MYCIN
► Dendral
► R3/XCON

Question No: 18  (Marks: 1) - Please choose one
An expert system may replace the expert or assist the expert.
► True  (Page 113) rep
► False

Question No: 19  (Marks: 1) - Please choose one
Conventional programming focuses on ________, while ES programming focuses on ________
► Solution, Problem  (Page 122)
► Problem, Solution
► Problem, Expert
► Solution, Expert

Question No: 20  (Marks: 1) - Please choose one
In backward chaining terminology, the hypothesis to prove is called the ________.
► Proof
► Goal  (Page 126)
► Plan
► None of the given
CS607 – Quizzes (Quiz No.1)

Question # 1 of 10 (Marks: 1) - Please choose one

Some essential components of problem solving are Problem statement, __________, solution space and Operators

► Complex State
► Initial State
► Intermediate State
► Goal State (Page 17)

Question # 2 of 10 (Marks: 1) - Please choose one

The traveling inside a solution space requires something called as __________

► Operands
► Inner solution
► Space solution
► Operators (Page 18)

Question # 3 of 10 (Marks: 1) - Please choose one

Genetic Algorithms is a search method in which multiple search paths are followed in _______

► Series
► Parallel (Page 77)
► None of the give
► Sequential

Question # 4 of 10 (Marks: 1) - Please choose one

Which of the following disciplines provides us with the theories of structure and meaning of language

► Linguistic (Page 9)
► Philosophy
► Biology
► Psychology

Question # 5 of 10 (Marks: 1) - Please choose one

In optimal path searches we try to find the ____________ solution

► Least
► Worst
► Least but not worst
► Best (Page 24)
Question # 6 of 10 ( Marks: 1 ) - Please choose one
In Depth First Search the node with the largest value of height will be at the _______ priority to be picked.
► Minimum
► Maximum (Page 25)
► Zero
► Both Minimum and maximum

Question # 7 of 10 ( Marks: 1 ) - Please choose one
In adversarial search there may occur such a scenario where two opponents also called _____ are searching for goal.
► Adversaries (Page 62)
► Friend
► Players
► Intruders

Question # 8 of 10 ( Marks: 1 ) - Please choose one
From discipline __________ we have information about the network structure of a human brain and all the theories on functionalities of different human organs.
► Mathematics
► Biology (Page 9)
► Computer Science
► Psychology

Question # 9 of 10 ( Marks: 1 ) - Please choose one
Hit and trial is classical approach to solve the _______ problem easily
► Trivial (Page 15)
► Medium

Question # 10 of 10 ( Marks: 1 ) - Please choose one
We use graph to represent problems and their solution spaces.
► False
► True (Page 22)

Question # 1 of 10 ( Marks: 1 ) - Please choose one
In GA, the random process is repeated until an individual with required _______ level is found. Select correct option:
► Higher
► Lower
► Fitness (Page 86)
► Logical
Question # 2 of 10 ( Marks: 1 ) - Please choose one
Mutation can be as simple as just flipping a bit at random or any number of bits
► True  (Page 79)
► False

Question # 3 of 10 ( Marks: 1 ) - Please choose one
Genetic algorithm uses evolutionary techniques, based on function optimization and artificial intelligence, to develop a solution.
► True  click here for detail
► False

Question # 4 of 10 ( Marks: 1 ) - Please choose one
An AI system has a __________ component that allows the system to get information from its environment.
► Planning
► Perception  (Page 89)
► Learning
► Execution

Question # 5 of 10 ( Marks: 1 ) - Please choose one
In the worst case of semantic network, we may need to traverse the entire network and then discover that the requested info ________.
► Does not exist  (Page 97)
► Exists
► Is incorrect
► Is correct

Question # 6 of 10 ( Marks: 1 ) - Please choose one
A statement in conjunctive normal form (CNF) consists of __________
► ANDs of Ors.  (Page 107)
► ANDs
► Ors
► Ors of ANDs

Question # 7 of 10 ( Marks: 1 ) - Please choose one
What is the correct order for solving a problem using GA
I. Choose the best individuals from the population for crossover
II. Choose initial population
III. Evaluate the fitness of each individual
► I,II,III
► I,III,II
► II,I,III
► II,III,I  (Page 84)
Question # 8 of 10 (Marks: 1) - Please choose one
Intelligence is the characteristics of:

► Living things (Page 4)
► All things
► None of them
► All of them

Question # 9 of 10 (Marks: 1) - Please choose one
Intelligence is the ability to

► Think / learn/Plan/ Schedule (Page 5)
► Recognize / Remember
► Problem Solving
► All of the Above

Question # 10 of 10 (Marks: 1) - Please choose one
Ability to tackle ambiguous and fuzzy problems demonstrate

► Intelligence (Page 6)
► Non intelligence behavior
► All of the given
► None of the given

Question # 1 of 10 (Marks: 1) - Please choose one
Can we precisely define Artificial Intelligence?
► Yes We Can
► No we cannot (Page 14)

Question # 2 of 10 (Marks: 1) - Please choose one
The traveling inside solution space requires something called

► Problem Statement
► Operands
► Operators (Page 18)
► Solution Space

Question # 3 of 10 (Marks: 1) - Please choose one
In DFS node with the largest value of height will be at Priority
► Maximum (Page 25)
► Minimum
► Zero
► Least
Question # 4 of 10 (Marks: 1) - Please choose one
Try to catch out own thoughts as they go by is
► Introspection  (Page 28)
► Psychology
► Both of above
► None of the above

Question # 5 of 10 (Marks: 1) - Please choose one
Classical way of problem solving
► GA
► Generate and Test  (Page 15)

Question # 6 of 10 (Marks: 1) - Please choose one
A function by which we can tell which board position is nearer to our goal is called
► Alternative function
► Recursive function
► Best function
► Fitness function  (Page 83)

Question # 7 of 10 (Marks: 1) - Please choose one
Procedures that search the solution space in an uninformed manner are usually costly with respect to _____.
► Time
► Space
► Time and space both
► All of the given  (Page 37)

Question # 8 of 10 (Marks: 1) - Please choose one
Best first search is a greedy approach.
► True  (Page 47)
► False

Question # 9 of 10 (Marks: 1) - Please choose one
Answering the Sequence Problem need
► Intelligence  (Page 15)
► Ability to make plan
► Ability to schedule
► None of the given
Question # 1 of 10 ( Marks: 1 ) - Please choose one
IF A THEN B This can be considered to have a similar logical meaning as the following:

► A -> B  (Page 99)
► A <-> B
► A <-> B
► None of the given

Question # 2 of 10 ( Marks: 1 ) - Please choose one
Within an expert system, the ____________ contains facts about a specific subject area and rules that express the reasoning procedures of an expert on the subject.

► Inference engine
► Knowledge engineer
► Knowledge base   click here for detail
► None of the given options

Question # 3 of 10 ( Marks: 1 ) - Please choose one
In the statement “IF A THEN B”, B is called

► Antecedent
► Consequent  (Page 95)

Question # 4 of 10 ( Marks: 1 ) - Please choose one
In some cases, the rules provide more definite actions such as “move left” or “close door”, in which case the rules are being used to represent _________.

► Recommendations
► Directives   (Artificial Intelligence, 3/E)   Click here for detail
► Relations
► None of the given options
Expert system can be expressed as:

- It provides tools for the management, delivery, tracking, and assessment of various types of employee learning and training
- The set of business processes, culture, and behavior required to obtain value from investments in information systems
- Used for finding the optimal solution for a specific problem by examining a very large number or possible solutions for that problem
- **Intelligent technique for capturing tacit knowledge in a very specific and limited domain of human expertise, this knowledge is converted to rules that can be used throughout the entire organization**

In general, the antecedent of a rule compares an object with a possible value, using an operator.

- True
- False

IF temperature is below 0 THEN weather is cold

The above rule is used to represent ________

- Recommendations
- Directives
- Relations (Page 96)
- None of the given options

Which of the following is a valid example which represents a suitable antecedent in a rule?

- IF x > 3
- IF name is “Bob”
- IF weather is cold
- All of the given options

From discipline of ______________ we have the tools and techniques to investigate the human mind and ways to represent the resulting theories

- Computer Science
- Biology
- Mathematics
- Psychology (Page 9)
Question # 10 of 10 (Marks: 1) - Please choose one

Intelligence is the characteristic of:

► Living being  (Page 4)
► All things
► None of them
► All of them

Question # 1 of 10 (Marks: 1) - Please choose one

_____ AI actually tries to recreate the functions of the inside of the brain as opposed to simply emulating behavior

► Weak
► Strong  (Page 8)
► Weak and Strong
► None of the given

Question # 2 of 10 (Marks: 1) - Please choose one

_____ AI treats the brain as a black box and just emulates its functionality.

► Weak  (Page 8)
► Strong
► Weak and Strong
► None of the given