

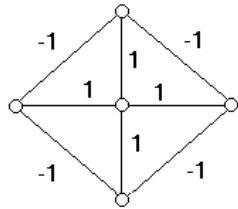
No.: \_\_\_\_\_

Name: \_\_\_\_\_

**Computer Science  
Homework for Chapter 11**

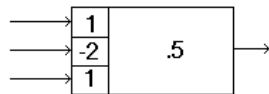
**Due: 2010/06/09**

\_\_\_\_\_1. The diagram below represents an associative memory as describe in the text. If the center unit has a threshold value of 2.5, under what condition will it become excited?



- A. Any of the other units excited
- B. Will never be excited
- C. Any two of the other units excited
- D. At least three of the other units excited

\_\_\_\_\_2. In an artificial neural network, what input values will cause the processing unit below to produce an output of 1.



- A. All three 0
- B. All three 1
- C. Any combination in which the center input is 0 and at least one other input is 1
- D. Any combination in which at least one input is 1

\_\_\_\_\_3. If the heuristic being used is the-number-of-tiles-out-of-place, which of the following eight-puzzle will be given priority for further consideration by a heuristic search?

- |          |        |        |        |
|----------|--------|--------|--------|
| A. 1 2 3 | B. 2 3 | C. 1 3 | D. 1 3 |
| 4 5      | 1 5 6  | 4 2 6  | 4 2 6  |
| 7 8 6    | 4 7 8  | 7 5 8  | 7 5 8  |

\_\_\_\_\_4. Which of the following programming methodologies seeks to develop software by a “trial and error” approach?

- A. Object-oriented programming
- B. Structured programming
- C. Evolutionary programming
- D. Declarative programming

\_\_\_\_\_5. Which of the following is a statement of the closed-world assumption?

- A. The database contains only partial information.
- B. The database contains only true statements.
- C. If a statement is not a consequence of information in the database, then the statement is false.
- D. The database contains all the information known to humans.

\_\_\_\_\_6. At what “stage” of analysis is the meaning of the word ball in the following sentence determined?

- A. Syntactic analysis
- B. Semantic analysis
- C. Contextual analysis

7. In the following table, connect the term to each phrase that gives the best description of the term. (40%)

Term	_____	Descriptive Phrase
semantic net	_____	<b>A.</b> A responsive entity
production system	_____	<b>B.</b> A means of measuring a machine's ability to perform like a human
breadth-first search	_____	<b>C.</b> The task of understanding an image
associative memory	_____	<b>D.</b> To identify by comparing to predefined patterns
inference rule	_____	<b>E.</b> A "universal" approach to the construction of reasoning systems
genetic algorithms	_____	<b>F.</b> A tool for simulating intuition
agent	_____	<b>G.</b> The result of considering all options equally important
real-world knowledge	_____	<b>H.</b> A "picture" of all states and productions
expert system	_____	<b>I.</b> A means of obtaining a statement that is a logical consequence of other statements
template matching	_____	<b>J.</b> The "database" used by an intelligent system to support its reasoning
image analysis	_____	<b>K.</b> A multiprocessor computer consisting of many simple processors
heuristic	_____	<b>L.</b> A field of artificial intelligence that applies evolutionary theories to the problem solving process
contextual analysis	_____	<b>M.</b> The ability to recall related information
state graph	_____	<b>N.</b> A software package for solving problems within a particular field
Turing test	_____	<b>O.</b> A means of representing knowledge
artificial neural network	_____	<b>P.</b> To relate a sentence to its environment