

Midterm

Due Oct 25 at 11pm **Points** 12 **Questions** 24

Available Oct 19 at 12am - Dec 2 at 11:59pm **Time Limit** 60 Minutes

Instructions

Once you begin to take this Midterm, you will have **60** minutes to complete it (or **90** minutes if you have a 1.5x time accommodation from AccessibleNU), after which time period the Midterm will **auto-submit** if you have not already submitted it. The Midterm will also auto-submit **at 11:00 PM on the due date** even if you're in the middle of taking the exam, and unlike with the homeworks, the Midterm does not have a grace period, which means **11:00 PM** on the due date is the cutoff time.

During the exam, you can change answers as many times as you like, but once you have submitted the exam, you cannot retake the exam.

There are **24** questions in this Midterm, each worth **0.5 points**, so that's **12 points**. The Midterm is slated to count as 10 points toward the 100 that form your grade, so the 2 extra points are **extra credit**. In other words, even if you complete 20 of the 24 questions, it is possible for you to score 100 in the course. If you answer one or more of the 2 extra questions, that's your chance to earn extra credit.

Good luck!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	38 minutes	10.25 out of 12

Score for this quiz: **10.25** out of 12

Submitted Oct 25 at 10:34pm

This attempt took 38 minutes.

Question 1

0.5 / 0.5 pts

AI is the same thing as Machine Learning. True or false?

True

False

Correct!

Question 2

0.5 / 0.5 pts

Strong AI typically refers to what?

Above-human-level intelligence in machines

Superintelligence

Human-level intelligence in machines

Sub-human-level intelligence in machines

Correct!

Question 3

0.5 / 0.5 pts

Any decision-making, any prediction, any thought, any utterance can be thought of a search problem. We can think of it as searching through a space of possibilities.

A searchable space as described above cannot be abstract. True or false?

True

False

Correct!

Question 4**0.5 / 0.5 pts**

To maintain the fringe, Breadth-first Search uses a ____, and Depth-first Search uses a ____.

Correct!

- queue (first-in, first out), stack (last-in, first-out)
- stack (last-in, first-out), queue (first-in, first out)
- stack (first-in, first-out), queue (last-in, first out)
- queue (last-in, first out), stack (first-in, first-out)

Question 5**0.5 / 0.5 pts**

As with most other algorithms, for Breadth-first and Depth-first Searches, we consider two types of complexities. What are they?

- Algorithm complexity and heuristic complexity
- Computation speed and time complexity
- Space complexity and memory
- Space complexity and time complexity

Correct!**Question 6****0.5 / 0.5 pts**

If a solution to a problem exists and an algorithm finds it, the algorithm is considered to be ____.

If an algorithm finds the best solution to a problem, the algorithm is

Correct!

considered to be ____.

complete, optimal

optimally complete, completely optimal

optimal, complete

Correct!**Question 7****0.5 / 0.5 pts**

Depth-first Search has a lower memory requirement than does Breath-first Search.

True

False

Correct!**Question 8****0.5 / 0.5 pts**

When we sacrifice the optimality, completeness, accuracy, and precision of a heuristic in favor of a rule of thumb with the hope of finding a good enough solution, that rule of thumb is known as an algorithm.

True

False

Correct!**Question 9****0.5 / 0.5 pts**

Straight-up (vanilla) A* Search is _____ that uses _____ in it.

Correct!

- an algorithm, a heuristic

- a heuristic, an algorithm

Question 10

0.5 / 0.5 pts

All trees are graphs, but not all graphs are trees.

Correct!

- True

- False

Question 11

0.5 / 0.5 pts

Knowledge is either the _____ between a knower and a proposition or the _____ itself, *representation* is the _____ between two domains, and *reasoning* is the _____ of _____ representing some believed propositions to produce representations of new propositions.

- manipulation, proposition, relation, manipulation, symbols

- manipulation, proposition, relation, proposition, symbols

- relation, proposition, relation, manipulation, symbols

- relation, proposition, manipulation, relation, symbols

Correct!

Question 12**0.5 / 0.5 pts**

Symbols form the syntax of a language that expresses propositions; the propositions themselves form the ____.

Correct!

- semantics
- symbolisms
- syntactics
- translations

Question 13**0.5 / 0.5 pts**

Match the partial sentences on the left to those on the right.

Correct!

Reasoning is logically sound if its inference is

guaranteed to be a logic ✓

Correct!

Reasoning is logically complete if it is

guaranteed to infer all e ✓

Correct!

Reasoning is

deductive inference. ✓

Question 14**0.5 / 0.5 pts**

fatherOf(angelina) is a function, whereas FatherOf(jon, angelina) is a predicate. Here, the former denotes ____, and the latter denotes ____.

Correct! a relationship, an identity an identity, a relationship**Question 15****0.5 / 0.5 pts**

Connectives such as \wedge , \exists , \supset , \neg , etc. are what?

 Illogical symbols Identifiers Non-logical symbols Logical symbols**Correct!****Question 16****0.5 / 0.5 pts**

What are \forall and \exists called in First-order Logic?

 Logical operators Quantities Variables Quantifiers**Correct!****Question 17****0.25 / 0.5 pts**

What are non-logical symbols made up of? [Select all that apply.]

Correct!

Predicate symbols

Correct!

Function symbols

You Answered

Variables

Identifiers

Question 18

0.5 / 0.5 pts

A Horn clause is written in the Conjunctive Normal Form (CNF), which means it's a ____ of ____ of literals.

Correct!

disjunction, conjugations

conjunction, disjunctions

disjunction, conjunctions

conjugation, conjunctions

Question 19

0.5 / 0.5 pts

For deductive reasoning, to show that $\text{KB} \models \alpha$, where KB is a knowledge base and α is a sentence, we can use Resolution to show that $\text{KB} \cup \{\neg\alpha\}$ is unsatisfiable by deriving the ____ clause.

Correct!

empty

santa super sub**Question 20****0.5 / 0.5 pts**

A Horn clause can have at most how many positive literals?

Correct! One Two Any number Zero**Question 21****0 / 0.5 pts**

A Horn clause is like an *if-then* statement, where the _____ or *body* serves as the "if" while the _____ serves as the "then."

Incorrect Answer premise, head**Iu Answered** tail, head head, tail**Question 22****0.5 / 0.5 pts**

The Horn clause, [$\neg \text{FirstNameHarry}$, $\neg \text{LastNamePotter}$, Wizard], claims that if someone's first name is Harry and their last name is Potter, they're a wizard. True or false?

Correct!

True

False

Question 23

0 / 0.5 pts

[$\neg \text{FirstNameHarry}$, $\neg \text{LastNamePotter}$, $\neg \text{Muggle}$] is a Horn clause. True or false?

Incorrect Answer

True

Previously Answered

False

Question 24

0 / 0.5 pts

[] is a Horn clause. True or false?

Incorrect Answer

True

Previously Answered

False

Quiz Score: **10.25** out of 12