QUIZIZZ Worksheets

Name

Class

Date

AI Unit-3 FOL

Total questions: 37

Worksheet time: 42mins

Instructor name: Mr. PRASHANT ATMAKURI

1. The rule of Universal Instantiation (UI for short) says that we can infer any sentence obtained by substituting a ground term (a term without variables) for the variable.

   a) False
   b) True

2. What among the following could the universal instantiation of _____ For all x King(x) ^ Greedy(x) => Evil(x)

   a) King(Richard) ^ Greedy(Richard) => Evil(Richard)
   b) King(John) ^ Greedy(John) => Evil(John)
   c) King(y) ^ Greedy(y) => Evil(y)
   d) All of the mentioned

3. Lifted inference rules require finding substitutions that make different logical expressions looks identical.

   a) Unification
   b) Universal Instantiation
   c) Existential Instantiation
   d) Modus Ponen

4. Which of the following is not the style of inference?

   a) Backward Chaining
   b) Modus Ponen
   c) Forward Chaining
   d) Resolution Refutation

5. In order to utilize generalized Modus Ponens, all sentences in the KB must be in the form of Horn sentences.

   a) False
   b) True

6. For resolution to apply, all sentences must be in conjunctive normal form, a conjunction of disjunctions of literals.

a) False
b) True

7. What are the two basic types of inferences?

a) Reduction to propositional logic, Manipulate rules directly
b) Apply modus ponen, Manipulate rules directly
c) Reduction to propositional logic, Apply modus ponen
d) Convert every rule to Horn Clause, Reduction to propositional logic

8. Which among the following could the Existential instantiation of ∃x Crown(x) ^ OnHead(x, Johnny)?

a) Crown(y) ^ OnHead(y, y, x)
b) None of the mentioned
c) Crown(x) ^ OnHead(x, Jonny)
d) Crown(John) ^ OnHead(John, Jonny)

9. Translate the following statement into FOL. "For every a, if a is a PhD student, then a has a master degree"

a) ∀ a PhD(a) -> Master(a)
b) A is false, B is false
c) ∃ a PhD(a) -> Master(a)
d) A is true, B is true

10. There exist only two types of quantifiers, Universal Quantification and Existential Quantification.

a) True
b) False

11. Translate the following statement into FOL. "For every a, if a is a philosopher, then a is a scholar"

a) ∃ a philosopher(a) scholar(a)
b) All of the mentioned
c) None of the mentioned
d) ∀ a philosopher(a) scholar(a)

12. A _____ is used to demonstrate, on a purely syntactic basis, that one formula is a logical consequence of another formula.

a) Inductive Systems
b) Deductive Systems
c) Search Based Systems
d) Reasoning with Knowledge Based Systems

13. The statement comprising the limitations of FOL is/are _____

a) Many-sorted Logic
b) All of the mentioned
c) Formalizing Natural Languages
d) Expressiveness

14. A common convention is: • is evaluated first • and are evaluated next • Quantifiers are evaluated next • is evaluated last.

a) True
b) False

15. A Term is either an individual constant (a 0-ary function), or a variable, or an n-ary function applied to n terms: F(t1 t2 ..tn).

a) True
b) False

16. First Order Logic is also known as _____

a) Lower Order Calculus
b) Quantification Theory
c) First Order Predicate Calculus
d) All of the mentioned

17. The adjective "first-order" distinguishes first-order logic from _____ in which there are predicates having predicates or functions as arguments, or in which one or both of predicate quantifiers or function quantifiers are permitted.

a) Higher Order Logic
b) Representational Verification
c) Inferential Efficiency
d) Representational Adequacy

18. Which is created by using single propositional symbol?

a) None of the mentioned
b) Composition sentences
c) Atomic sentences
d) Complex sentences

19. Which is used to construct the complex sentences?

a) Symbols
b) Connectives
c) All of the mentioned
d) Logical connectives

20. How many proposition symbols are there in artificial intelligence?

a) 4
b) 3
c) 2
d) 1

21. How many logical connectives are there in artificial intelligence?

a) 5
b) 3
c) 4
d) 2

22. Which is used to compute the truth of any sentence?

a) First-order logic
b) Both Semantics of propositional logic & Alpha-beta pruning
c) Semantics of propositional logic
d) Alpha-beta pruning

23. Which are needed to compute the logical inference algorithm?

a) Logical equivalence
b) Validity
c) All of the mentioned
d) Satisfiability

24. From which rule does the modus ponens are derived?

a) Inference rule
b) Both Inference & Module rule
c) None of the mentioned
d) Module rule

25. Which is also called single inference rule?

a) Resolution
b) Reference
c) Reform
d) None of the mentioned

26. Which form is called as a conjunction of disjunction of literals?

a) Disjunctive normal form
b) Normal form
c) All of the mentioned
d) Conjunctive normal form

27. What can be viewed as a single lateral of disjunction?

a) Combine clause
b) Multiple clause
c) None of the mentioned
d) Unit clause

28. Which rule of inference is used in each of these arguments, "If it is Wednesday, then the Smartmart will be crowded. It is Wednesday. Thus, the Smartmart is crowded."

a) Modus ponens
b) Simplification
c) Modus tollens
d) Disjunctive syllogism

29. Which rule of inference is used in each of these arguments, "If it hailstoday, the local office will be closed. The local office is not closed today. Thus, it did not hailed today."

a) Hypothetical syllogism
b) Modus tollens
c) Conjunction
d) Simplification

30. Which rule of inference is used, "Bhavika will work in an enterprise this summer. Therefore, this summer Bhavika will work in an enterprise or he will go to beach."

a) Simplification
b) Addition
c) Conjunction
d) Disjunctive syllogism

31. What rule of inference is used here? "It is cloudy and drizzling now. Therefore, it is cloudy now."

a) Addition
b) Simplification
c) Resolution
d) Conjunction

32. What rule of inference is used in this argument? "If I go for a balanced diet, then I will be fit. If I will be fit, then I will remain healthy. Therefore, if I go for a balanced diet, then I will remain healthy."

a) Hypothetical syllogism
b) Modus ponens
c) Disjunctive syllogism
d) Modus tollens

33. What rules of inference are used in this argument? "All students in this science class has taken a course in physics" and "Marry is a student in this class" imply the conclusion "Marry has taken a course in physics."

a) Universal instantiation
b) Universal generalization
c) Existential instantiation
d) Existential generalization

34. What rules of inference are used in this argument? "It is either colder than Himalaya today or the pollution is harmful. It is hotter than Himalaya today. Therefore, the pollution is harmful."

a) Conjunction
b) Modus ponens
c) Hypothetical syllogism
d) Disjunctive syllogism

35. The premises $(p \wedge q) \vee r$ and $r \rightarrow s$ imply which of the conclusion?

a) $p \vee q$
b) $p \vee s$
c) $p \vee r$
d) $q \vee r$

36. What rules of inference are used in this argument? "Jay is an awesome student. Jay is also a good dancer. Therefore, Jay is an awesome student and a good dancer."

a) Conjunction
b) Simplification
c) Modus ponens
d) Disjunctive syllogism

37. "Parul is out for a trip or it is not snowing" and "It is snowing or Raju is playing chess" imply that _____

a) Raju is playing chess
b) Parul is out for trip
c) Parul is out for a trip and Raju is playing chess
d) Parul is out for a trip or Raju is playing chess

Answer Keys

1. b) True
2. d) All of the mentioned
3. a) Unification
4. b) Modus Ponen
5. b) True
6. b) True
7. a) Reduction to propositional logic, Manipulate rules directly
8. d) Crown(John) ^ OnHead(John, Jonny)
9. a) ∀ a PhD(a) -> Master(a)
10. a) True
11. d) ∀ a philosopher(a) scholar(a)
12. b) Deductive Systems
13. b) All of the mentioned
14. a) True
15. a) True
16. d) All of the mentioned
17. a) Higher Order Logic
18. c) Atomic sentences
19. d) Logical connectives
20. c) 2
21. a) 5
22. c) Semantics of propositional logic
23. c) All of the mentioned
24. a) Inference rule
25. a) Resolution
26. d) Conjunctive normal form
27. d) Unit clause
28. a) Modus ponens
29. b) Modus tollens
30. b) Addition
31. b) Simplification
32. a) Hypothetical syllogism
33. a) Universal instantiation
34. d) Disjunctive syllogism
35. b) p ∨ s
36. a) Conjunction
37. d) Parul is out for a trip or Raju is playing chess