First and last name .....

Question 1/35

There are two types of quantifiers used to quantify the statement in the knowledge representation in AI. What are these two types of quantifiers?
i.Universal Quantifiers
ii. Subjective Quantifiers
iii.Existential Quantifiers
iv. Selective Quantifiers

A. i. and iii.
B. ii. and iii.
C. i. and ii.
D. iii. and iv.

Question 2/35

The statement comprising the limitations of FOL is/are _____

A. Formalizing Natural Languages
B. Many-sorted Logic
C. All of the mentioned
D. Expressiveness

Question 3/35

The modus ponens are derived From which rule?

A. None of these
B. Inference rule
C. Module rule
D. Both Inference and Module rule

Question 4/35

The preposition $(p \rightarrow q) \wedge (\sim q \vee p)$ is equivalent to:

A. $(p \rightarrow q) \vee (q \rightarrow p)$
B. $(q \rightarrow p) \wedge (p \rightarrow q)$
C. $p \rightarrow q$
D. $q \rightarrow p$

Question 5/35

Let v(x) mean x is a vegetarian, m(y) for y is meat, and e(x, y) for x eats y. Based on these, consider the following sentences:
I. x v(x) (y e(x, y) ¬m(y))
II. x v(x) (¬(y m(y) ∧ e(x, y)))
III. x (y m(y) ∧ e(x, y)) ¬v(x)
One can determine that

A. Only I and II are equivalent sentences
B. Only I and III are equivalent sentence
C. I, II, and III are equivalent sentences
D. Only II and III are equivalent sentences

Question 6/35

A cryptarithmetic problem of the type
SEND
+ MORE

MONEY

Can be solved efficiently using

A. bidirectional search
B. depth first technique
C. breadth first technique
D. constraint satisfaction technique

Question 7/35

A fact in prolog is a special case of a:

A. Goal
B. Term
C. Rule
D. Query

Question 8/35

Match each Artificial Intelligence term in List-I that best describes a given situation in List – II:

List – I	List – II
I. Semantic Network	a. Knowledge about what to do as opposed to how to do it.
II. Frame	b. A premise of a rule that is not concluded by any rule.
III. Declarative knowledge	c. A method of knowledge representation that uses a graph.
IV. Primitive knowledge.	d. A data structure representing stereotypical

A. d c a b
B. d a b c
C. d c b a
D. c d a b

Question 9/35

Which of the following is false for the programming language PROLOG?

A. The scope of a variable in PROLOG is a single query
B. A PROLOG variable can only be assigned to a value once
C. PROLOG is a strongly typed language
D. The scope of a variable in PROLOG is a single clause or rule

Question 10/35

In the sentences given below, ‘ram’ is a constant, ‘x’ and ‘y’ are universally quantified variables and ‘mother’ is a function.
Knows(ram, ?x)
Knows(?y, mother(?y))

A. { y/ram, x/dev }
B. { y/mother(ram), x/ram }
C. { y/ram, x/mother(ram) }
D. { y/dev, x/mother(ram) }

Question 11/35

In first-order logic, how would you express that “something likes something”?

A. xyLikes(x, y)
B. xyLikes(x, y)
C. xyLikes(x, y)
D. xyLikes(x, y)

Question 12/35

Which of the following correctly represents the Modus Ponen?

A. P→Q and Q then R
B. P→Q and P then Q
C. P→Q and Q then P
D. P, Q then R

Question 13/35

Which of the following is a correct predicate logic statement for "Every Natural number has one successor" ?

A. xy (succ(x, y) (z succ(x, z) equal (y, z)))
B. xy (succ(x, y) (z succ(x, z) equal (y, z)))
C. yx (succ(x, y) (z succ(x, z) equal (y, z)))

D. xy succ (x, y)

Question 14/35

Propositional logic uses symbols to stand for statements and...

A. Truth values
B. The relationships between subject and predicate
C. Nonstatements
D. The relationships between statements

Question 15/35

In FOL, a …….. is a property that a variable or a finite collection of variable can have.

A. Function
B. Constant
C. Predicate
D. Logic

Question 16/35

Which is used to compute the truth of any sentence?

A. First-order logic
B. Alpha-beta pruning
C. Semantics of propositional logic
D. Both Semantics of propositional logic & Alpha-beta pruning

Question 17/35

What are you predicating by the logic: ∀x: ∈y: loyalto(x, y).

A. Everyone is loyal
B. Everyone is loyal to all
C. Everyone is loyal to some one
D. Everyone is not loyal to someone

Question 18/35

The first order logic (FOL) statement ((RvQ)∧(Pv¬Q)) is equivalent to which of the following?

A. ((RvQ)∧(Pv¬Q)∧(RvP))
B. ((RvQ)∧(Pv¬Q)∧(Rv¬P))
C. ((Rv¬Q)∧(Pv¬Q)∧(RvP))
D. ((RvQ)∧(Pv¬Q)∧(¬RvP))

Question 19/35

Consider the following logical inferences :
I1 : If it is Sunday then school will not open.
The school was open.
Inference : It was not Sunday.
I2 : If it is Sunday then school will not open.
It was not Sunday.
Inference : The school was open.
Which of the following is correct?

A. I1 is correct but I2 is not a correct inference
B. I1 is not correct but I2 is a correct inference.
C. Both I1 and I2 are correct inferences.
D. Both I1 and I2 are not correct inferences.

Question 20/35

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

A. All of the mentioned
B. a philosopher(a) scholar(a)
C. a philosopher(a) scholar(a)
D. None of the mentioned

Question 21/35

The clausal form of the disjunctive normal form ¬ A ∨ ¬ B ∨ ¬ C ∨ D is :

A. A ∨ B ∨ C ∨ D true
B. A ∧ B ∧ C ∧ D true
C. A ∧ B ∧ C D
D. A ∧ B ∧ C ∧ D false

Question 22/35

If a person is a female and is a parent, then this Pearson is someone's mother.

A. X y ((female(X) Λ parent (X)) → ~mother (X, Y))
B. X y ((female(X) Λ parent (X)) → mother (X, Y))
C. X y ((female(X) Λ parent (X)) Vmother (X, Y))
D. X y ((female(X) v parent (X)) → mother (X, Y))

Question 23/35

A conditional is false only when the antecedent is…

A. False and the consequent is false
B. False and the consequent is true
C. True and the consequent is true
D. True and the consequent is false

Question 24/35

Everyone has exactly one best friend.

A. y (best_friend(X, Y) Λ Z (¬ equal (Z, Y) → best_friend (X, Y))
B. y (best_friend(X, Y) V Z (¬ equal (Z, Y) → ¬ best_friend (X, Y))
C. y (best_friend(X, Y) Λ Z (equal (Z, Y) → ¬ best_friend (X, Y))
D. y (best_friend(X, Y) Λ Z (¬ equal (Z, Y) → ¬ best_friend (X, Y))

Question 25/35

Which form is called as conjunction of disjunction of literals?

A. Disjunctive normal form
B. All of the mentioned
C. Normal form
D. Conjunctive normal form

Question 26/35

What kind of clauses are available in Conjunctive Normal Form?

A. Disjunction of literals

B. Conjunction of literals
C. Conjunction of variables
D. Disjunction of variables

Question 27/35

Which is mainly used for automated reasoning

A. Parallel programming
B. Forward chaining
C. Logic programming
D. Backward chaining

Question 28/35

Consider the following statement:
"The Existential Quantifier is used at the places where only some part of the subject's population is to be defined under the predicate."
By reading the above statement, what are the phrases for which the existential quantifier can be applied?

A. For all
B. For every
C. For some
D. All of the above

Question 29/35

Which of the following correctly represents logical equivalence?

A. P→Q ≡ ¬QVP
B. P→Q ≡ ¬PVQ
C. P→Q ≡ ¬PQ
D. P→Q ≡ ¬QP

Question 30/35

Backtracking is based on _____

A. Last in first out
B. First in first out
C. Both Last in first out & Recursion
D. Recursion

Question 31/35

"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. None of the mentioned
C. a philosopher(a) scholar(a)
D. All of the mentioned

Question 32/35

Which is created by using single propositional symbol?

A. None of the mentioned
B. Composition sentences
C. Atomic sentences
D. Complex sentences

Question 33/35

Which of the following propositional formulas is a tautology?

A. p p
B. p → (q → p).
C. (p → q) (q → p).
D. p.

Question 34/35

First order logic(FOL) is called ‘first order’ because

A. FOL does not allow quantification over predicate symbols or function symbols
B. FOL comes first in the logics involving quantifiers
C. Propositional logic is zero-order.
D. Predicates are first-order relations

Question 35/35

How do you represent “All tigers have tails”.

A. ∀x: tiger(x)->hastail(x)
B. ∀x: tiger(y) ->hastail(x)
C. ∀x: tiger(x) ->hastail(y)
D. ∀x: tiger(x) ->has->tail(x)