The working memory of the problem solver is like its _____
A. Long term memory
B. Short term memory
C. Permanent Memory
D. None of these
ANSWER:B

_____search regresses over goals and validate a plan before returning it.
A.Forward state space
B.Backward state space
C.Goa stack
D.None of these
ANSWER:B

_____ Procedure selects a flaw in a given plan and looks for a resolver.
A.Goal stack planning
B.The plan space planning
C.Recursive goal stack planning
D.Partial order Planning
ANSWER:B

The relationships between behavioral acts are not defined in the partial order plan until absolutely necessary.
A.True
B.False
ANSWER:B

A* generates will not generate optimal solution if h(n) is a consistent heuristics and the search space is graph
A.True
B.False
ANSWER:B

Which of the following combination of labels is not allowed for W joint in scene labelling is not allowed
A.(+,−,+)
B.(−,+,−)
C.(←,+,←)
D.(←,←,←)
ANSWER:D

If it is possible to extend each pair of consistent variable instantiation to a third variable, a CSP is said to be _____
A.Arc Consistent
B.I- Consistent
C.Path consistent.
D.2- consistent
ANSWER:C

The _____algorithm explores the domain in a depth first manner.
A.Backtracking
B.Forward checking
C.Arc consistency
D.Strategic Retreat
ANSWER:A

_____ are mathematical problems defined as a set of objects whose state must satisfy a number of constraints or limitations.
A.Constraints Satisfaction Problems
B.Uninformed Search Problems

C.Local Search Problems
D.All of the mentioned
ANSWER:A

Which of the Following problems can be modeled as CSP?
A.8-Puzzle problemB.
B.8-Queen problem
C.Map coloring problem
D.All of the mentioned
ANSWER:D

The term _____ is used for a depth-first search that chooses values for one variable at a time and returns when a variable has no legal values left to assign.
a) Forward search
b) Backtrack search
c) Hill algorithm
d) Reverse-Down-Hill search
ANSWER:B

Consider a problem of preparing a schedule for a class of student. What type of problem is this?
a) Search Problem
b) Backtrack Problem
c) CSP
d) Planning Problem
ANSWER:C

Constraint satisfaction problems on finite domains are typically solved using a form of _____
a) Search Algorithms
b) Heuristic Search Algorithms
c) Greedy Search Algorithms
d) All of the mentioned
ANSWER:D

Backtracking is based on _____
A.Last in first out
B.First in first out
C.Recursion
D.Both Last in first out & Recursion
ANSWER:D

The inference engine goes through which cycle?
A. Match-Resolve-Execute
B. Execute-Resolve-Match
C. Resolve Match Match
D. Resolve Match Execute
ANSWER: A

The output of MATCH routine in Inference Engine is _____
A. Pattern set
B. Conflict set (CS)
C. Rule set
D. Action set
ANSWER: B

Operator PUTDOWN has which of the following sequence of actions?
A. holding(x),Ontable(x),holding(x)
B. holding(x),armempty, holding(x)

C. holding(x),Ontable(x)
D. holding(x),Ontable(x)^armempty, holding(x)
ANSWER: D

Frame problem in STRIPS Domain can be solved by _____
A. Operator
B. Frame Aximoms
C. Precondition
D. Action
ANSWER: B

PDDL stands for_____
A. Path data description Language
B. Planning Domain Description Language
C. Planning data Description Language
D. Path data deleted Language
ANSWER: B

In PDDL,the Language is based on _____
A. Propositional logic notation
B. Second Order Logic Notation
C. First Order Logic Notation
D. All of these
ANSWER: C

STRIPS operators are made up of which three components:
A. P: Precondition List , A: Add List , D:Delete List
B. P: Postcondition List , A: Add List , D:Delete List
C. P: Precondition List , S: Sub List , D:Delete List
D. P: Postcondition List , S: Sub List , D:Delete List
ANSWER: A

Which search algorithm imposes a fixed depth limit on nodes?
A. Depth-limited search
B. Depth-first search
C. Iterative deepening search
D. Bidirectional search
ANSWER: A

In a rule-based system, procedural domain knowledge is in the form of:_____
A. production rules
B. rule interpreters
C. meta-rules
D. control rules
ANSWER: A

_____ is a state that is better than all its neighboring states but is not better than some other states further away
A. Plateau
B. Local Maximum
C. Global Maximum
D. All of the above
ANSWER: B

_____ algorithm keeps track of k states rather than just one.
A. Hill-Climbing search
B. Local Beam search
C. Stochastic hill-climbing search
D. Random restart hill-climbing search

ANSWER: B

Which is the most straightforward approach for planning algorithm?
A. Best-first search
B. State-space search
C. Depth-first search
D. Hill-climbing search
ANSWER: B

_____ is/are the well known Expert System/s for medical diagnosis systems
A. MYSIN
B. CADUCEUS
C. DENDRAL
D. SMH.PAL
ANSWER: A

Which of the following statement(s) is true for Sparse-Memory Graph Search (SMGS)?
A. The boundary is defined as those nodes in CLOSED that have at least one successor still in OPEN
B. The nodes in CLOSED that are not on the boundary are in the kernel
C. The number of relay nodes on each path is exactly one.
D. Both A & B
ANSWER: D

Is the below statement true for the domain of positive integers
∀p ∃q (p + q = 7)
A. Yes
B. No
ANSWER:A

Which of the following is a sound rule of inference?
A. Q ∧ (P → Q) → P
B. P → (P ∨ Q)
C. Q ∨ (P → Q) → P
D. All of above
ANSWER:B

Is the following Sentence valid?
∀x ∃ y P(x,y) ≡ ∃ y ∀ x P(x,y)
A. Yes
B. No
ANSWER:B

Is ∀z S(x,y) a well-formed formula?
A. Yes
B. No
ANSWER:A

The statement comprising the limitations of FOL is/are _____
A.Expressiveness
B.Formalizing Natural Languages
C.Many-sorted Logic
D.All of the mentioned
ANSWER:D

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.presentational Verification
B.Representational Adequacy
C.Higher Order Logic
D.Inferential Efficiency
ANSWE:C

"In AI systems, Knowledge can be represented in two ways. What are these two ways?
i.Machine Logic
ii.Predicate Logic
iii.Propositional Logic
iv. Compound Logic"
A. i. and ii.
B. i. and iii.
C. ii. and iii.
D. iii. and iv.
ANSWER:C

Not only do formal logics allow representation of knowledge, but they also allow representation of knowledge Mechanisms for reasoning using a collection of well-defined manipulation rules Of Representations.
A. True
B. False
ANSWER:A

If a logic produces only true statements and does not produce any false statement it shows which of the following property
A. Completeness
B. Soundness
C. Consistency
D. None of these
ANSWER:B

Is the following rule of inference valid one
A. No
B. Yes
ANSWER:B

_____Graph is used to represent semantic network
A. Undirected
B. Directed
C. Undirected
D. Any one of the above
ANSWER:B

What is the nature of the sentence: ∀x ∀y (TeacherOf(x,y) ⊃ StudentOf(y,x))
A. Symmetry
B. Exhaustiveness
C. Inverse
D. None of the above
ANSWER:C

The formula or sentences that can be maid true by certain valuation function are called
A. Valid formula
B. Satisfiable formula
C. Unsatisfiable formula
D. Invalid Formula
ANSWER:B

A _____ is used to demonstrate, on a purely syntactic basis, that one formula is a logical consequence of another formula.
A.Deductive Systems
B.Inductive Systems
C.Reasoning with Knowledge Based Systems
D.Search Based Systems
ANSWER:A

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

• is evaluated last.
A.True
B.False
ANSWER:A

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
ANSWER:A

First Order Logic is also known as _____
A.First Order Predicate Calculus
B.Quantification Theory
C.Lower Order Calculus
D.All of the mentioned
ANSWER:D

Which is created by using single propositional symbol?
A.Complex sentences
B.Atomic sentences
C.Composition sentences
D.None of the mentioned
ANSWER:B

Which is used to construct the complex sentences?
A.Symbols
B.Connectives
C.Logical connectives
D.All of the mentioned
ANSWER:C

How many proposition symbols are there in artificial intelligence?
A.1
B.2
C.3
D.4
ANSWER:B

Which is used to compute the truth of any sentence?
A.Semantics of propositional logic
B.Alpha-beta pruning
C.First-order logic
D.Both Semantics of propositional logic & Alpha-beta pruning
ANSWER:A

Which are needed to compute the logical inference algorithm?
A.Logical equivalence
B.Validity
C.Satisfiability
D.All of the mentioned
ANSWER:D

From which rule does the modus ponens are derived?
A.Inference rule
B.Module rule
C.Both Inference & Module rule
C.None of the mentioned
ANSWER:A

Which is also called single inference rule?
A.Reference
B.Resolution
C.Reform
D.None of the mentioned
ANSWER:B

Which form is called as a conjunction of disjunction of literals?
A.Conjunctive normal form
B.Disjunctive normal form
C.Normal form
D.All of the mentioned
ANSWER:A

What can be viewed as a single lateral of disjunction?
A.Multiple clause
B.Combine clause
C.Unit clause
D.None of the mentioned
ANSWER:C

A) Knowledge base (KB) is consists of set of statements.
B) Inference is deriving a new sentence from the KB.
Choose the correct option.
A. A is true, B is true
B. A is false, B is false
C. A is true, B is false
D. A is false, B is true
ANSWER:A

What among the following constitutes the representation of the knowledge in different forms?
A. Relational method where each fact is set out systematically in columns
B. Inheritable knowledge where relational knowledge is made up of objects
C. Inferential knowledge
D. All of the mentioned
ANSWER:D

What are Semantic Networks?
A. A way of representing knowledge
B. Data Structure
C. Data Type
D. None of the mentioned
ANSWER:A

Graph used to represent semantic network is _____
A. Undirected graph
B. Directed graph
C. Directed Acyclic graph (DAG)
D. Directed complete graph
ANSWER:B

The basic inference mechanism in semantic network is to follow the links between the nodes.
A. True
B. False
ANSWER:A

Which of the following elements constitutes the frame structure?
A. Facts or Data
B. Procedures and default values
C. Frame names
D. Frame reference in hierarchy
ANSWER:A

There exists two way to infer using semantic networks in which knowledge is represented as Frames.
A. Intersection Search
B. Inheritance Search
ANSWER:A

Which problem can frequently occur in backward chaining algorithm?
A. Repeated states
B. Incompleteness
C. Complexity
D. Both Repeated states & Incompleteness
ANSWER:D

How to eliminate the redundant rule matching attempts in the forward chaining?
A. Decremental forward chaining
B. Incremental forward chaining
C. Data complexity
D. None of the mentioned
ANSWER:B

Which of the following is an extension of the semantic network?
A. Expert Systems
B. Rule Based Expert Systems
C. Decision Tree Based networks
D. Partitioned Networks
ANSWER:D

what is the issue of Forward State Space Planning?
A. low banching factor.
B. large branching factor.
C. work in forward fashion
D. work in backward fashion
ANSWER: B

Goal Stack Planning breaks up a _____
A. initial state
B. stack in different part
C. set of goal predicates into individual subgoals
D. All of the above
ANSWER: C

What is true about Linear Planning?
A. It refers to the fact that the subgoals are attempted and solved in a linear order.
B. attempts to solve subgoals individually one after another.
C. attempts to solve subgoal individually in non linear fashion
D. Both A & B
ANSWER: D

Agent interacts with the world via _____ and _____
A. decision , effect
B. Perception, decision
C. Perception, Action
D. Perception, effect
ANSWER: C

The start node for search in plan space planning is_____
A. BFS
B. DFS
C. Both DFS and BFS
D. A*
ANSWER: C

In which chaining, the Left-Hand side is used to match the rules and Right-Hand side is used to check the effect of using the rule.
A. Forward Chaining
B. Backward Chaining
C. Reverse Chaining
D. Both B & C
ANSWER: A

The components of Expert system are?
A. A Set of Rules, The Inference Engine (IE), Forward Chaining
B. A Set of Rules, Backward Chaining, A Working Memory (WM)
C. A Set of Rules, The Inference Engine (IE), A Working Memory (WM)
D. A Set of Rules, Forward Chaining, Backward Chaining
ANSWER: C

What is true about Artificial Intelligence?
A. The ability to solve problems.
B. The ability to act rationally.
C. The ability to act like humans
D. All of the above
ANSWER: D

Which of the following are Informed search algorithms?
A. Best First Search
B. A* Search
C. Iterative Deeping Search
D. Both a & b
ANSWER: D

If there is a solution, breadth first search is _____to find it
A. Difficult
B. Guaranteed
C. Not able to find
D. None of the above
ANSWER: B

Which search strategy is combining the benefits of both BFS and DFS?
A. Depth Limited Search
B. A*
C. Iterative Deepening Depth first search
D. Best first search
ANSWER: C

Admissibility of the heuristic function is given as:
A. h(n)>= h*(n)
B. h(n)< h*(n)
C. h(n)== h*(n)
D. h(n)<= h*(n)
ANSWER: D

The efficiency of A* algorithm depends on _____
A. depth
B. the quality of heuristic
C. unknown nodes
D. d. None of the above
ANSWER: B

What is the termination criteria in Hill climbing?
A. when no successor of the node has better heuristic value.
B. when successor of the node has better heuristic value.
C. when no ancestor of the node has better heuristic value.
D. when ancestor of the node has better heuristic value.
ANSWER: A

What is true about variable neighborhood function?
A. Neighbourhood functions that are sparse lead to quicker movement during search
B. algorithm has to inspect very fewer neighbours
C. VDN stars searching with sparse Neighbourhood functions, when it reaches an optimum, it switches to denser function.
D. All of the above
ANSWER: D

_____requires Linear Space but uses backtracking
A. Breadth First Search

B. Recursive Best First Search (RBFS)
C. A*
D. IDA*
ANSWER: B

Which property asks that the algorithm is locally admissible?
A. Admissibility
B. Monotonicity
C. Informedness
D. None of the above
ANSWER: B

A* Search Algorithm _____
A. does not expand the node which have the lowest value of f(n),
B. finds the shortest path through the search space using the heuristic function i.e f(n)=g(n) + h(n)
C. terminates when the goal node is not found.
D. All of the above
ANSWER: B

Which is not problem in Hill climing?
A. Plateau
B. Ridges
C. Local Maximum
D. landscape
ANSWER: D

Tabu search is designed _____
A. as it does not follow aspiration criteria
B. to escape the trap of local optimality.
C. to unrecord forbidden moves, which are referred to as tabu moves .
D. All of the above
ANSWER: B

Production/Rule looks like_____
A. Pattern-->Data
B. Action-->Data
C. Pattern-->Action
D. None of the above
ANSWER: C

How can we convert AO graph with mixed nodes into graph with pure AND and OR nodes?
A. By traversing multiple node
B. By deleting one of the node
C. By addition of extra node
D. None of the above
ANSWER: C

Arc consistency in AO graph is concernd with _____
A. Nodes
B. finding consistent values for pairs of variables.
C. unary constraint
D. All of the above
ANSWER: B

A planning problem P in BSSP is defined as a _____
A. triple (S, G, O)
B. triple (S1, S2, O)

C. triple (G1, G, O)
D. None of the above
ANSWER: A

Plan representation in Plan Space Planning is done with__ ----------
links
A. binding links
B. ordering links and casual link
C. Contigent link
D. head step
ANSWER: B

What is true aboout Iterative Deepening DFS?
A. It does not perform DFS in a BFS fashion.
B. It is the preferred informed search method
C. It's a Depth First Search, but it does it one level at a time, gradually increasing the limit, until a goal is found.
D. Is a depth-first search with a fixed depth limit l
ANSWER: C

What is the main advantage of backward state-space search?
A. Cost
B. Actions
C. Relevant actions
D. All of the mentioned
ANSWER: C

Backward State Space Planning (BSSP)_____
A. simply explores the set of all future states in possible order
B. Start searching backwards from the goal
C. leads to huge search space
D. has no sense of direction
ANSWER: B

In Backward State Space Planning ,regress(A,G) that returns
_____
A. the regressed goal over action A when applied to goal G.
B. the goal state over action A when applied to goal G.
C. the initial state over action A when applied to goal G.
D. Both A & B
ANSWER: A

What is true about Backward State Space Planning?
A. goal states are often incompletely specified.
B. expresses only what is desired in the final state, rather than a complete description of the final state.
C. It uses regression
D. All of the above
ANSWER: D

$effects^{+}$ (a) in Forward State Space Planning denotes _____
A. denotes the set of negative effects of action a
B. denotes the set of neutral effects of action a
C. denotes the set of positive effects of action a
D. None of the above
ANSWER: C

In Forward State Space Planning , Progress (A, S) function returns
_____

A. the successor state S when action A is applied to state S.
B. the predecessor state S when action A is applied to state S.
C. Both A & B
D. None of the above
ANSWER: A

What are the drawbacks of Forward State Space Planning?
A. FSSP has very huge search space
B. It includes the actions that have nothing go do with achieving the goal
C. Regression is used in Forward State Space Planning
D. Both A & B
ANSWER: D

What arcs represents in AO Graph?
A. subproblem to be solved individually
B. solution
C. Path
D. Sequence of actions
ANSWER: A

Which are the first AI applications of AO graph?
A. SAINT
B. XCON
C. DENDRAL
D. Both A and C
ANSWER: D

What is Hyper-Edge in AO Graph?
A. Many edges together can be Hyber edge
B. Those are AND Edges only
C. Both 1 and 2
D. None of the above
ANSWER: C

What cost is assumed for arc while solving AO* progress example?
A. 0
B. 1
C. 2
D. 3
ANSWER: B

What is the heuristic cost of SOLVED nodes in AO* example?
A. 0
B. 1
C. 2
D. 3
ANSWER: A

What is used to lable primitive problems in AO problem?
A. Unvisited
B. UNSOLVED
C. SOLVED
D. visited
ANSWER: C

When do we call the states are safely explored?
A.A goal state is unreachable from any state
B.A goal state is denied access
C.A goal state is reachable from every state
C.None of the mentioned
ANSWER:C

Which of the following algorithm is generally used CSP search algorithm?
A.Breadth-first search algorithm
B.Depth-first search algorithm
C.Hill-climbing search algorithm
D.None of the mentioned
ANSWER:B

Which of the following conditions must hold for a solution to a CSP?
A.All relations in all constraints must hold
B.At least one relation in all constraints must hold.
C.More than one relation in all constraints must hold.
D.All relations in at least one constraint must hold.
ANSWER:B

Which of the following are true for the algorithms Beam Stack Search (BSS)and Divide-and-Conquer Beam Stack Search (DCBSS).
A. BSS finds the optimal path while DCBSS does not.
B. DCBSS finds the optimal path while BSS does not.
C. Both BSS and DCBSS find the optimal path
D. Neither BSS and DCBSS find the optimal path
ANSWER: C

The performance of an agent can be improved by _____
A. Learning
B. Observing
C. Perceiving
D. Sensing
ANSWER: A

_____ Is an algorithm, a loop that continually moves in the direction of increasing value – that is uphill.
A. Up-Hill Search
B. Hill-Climbing
C. Hill algorithm
D. Reverse-Down-Hill search
ANSWER: B