MED1:

1. is computer system that can act like or simulate the functioning of the human brain
   a. Neural network
   b. Perceptive system
   c. Robotics
   d. Expert system

2. The two most fundamental concerns of AI researchers are:
   a. Knowledge Representation and Search
   b. Knowledge Representation and Machine learning
   c. Search and Expert Systems
   d. Robotics and machine learning

3. is a process of achieving a specific goal based on the given knowledge.
   a. Problem Representation
   b. Automated Reasoning
   c. Planning
   d. Search

4. is defined as Computer changes how it functions or reacts to situations based on feed back.
   a. Perceptive system
   b. Vision system
   c. Expert system
   d. Learning system

5. For propositional expressions P, Q and R, the law below is:
$$((P \wedge Q) \wedge R) \equiv (P \wedge (Q \wedge R))$$
   a. Commutative law
   b. Distributive law
   c. Contrapositive law
   d. Associative law

6. Which is not the commonly used programming language for AI?
   a. PROLOG
   b. Java
   c. LISP
   d. Java script

7. In Turing test, If the interrogator can distinguish the machine from the human then
   a. The The machine is intelligent
   b. The interrogator is intelligent
   c. The machine is not intelligent
   d. The interrogator is not intelligent

8. The example below is:
   if it rains, the picnic will be cancelled.
   The picnic is cancelled, therefore it is raining.
     a. Modus ponens
     b. Modus tollens
     c. Introduction
     d. Elimination

9. Good students do not fail in exams; the translation of this sentence into First Order Predicate Calculus is ....
     a. $\forall X((good\_students(X) \land fail\ in\ exams(X))$
     b. $-\exists X((good\_students(X) \land fail\ in\ exams(X))$
     c. $\forall X((good\_students(X) \rightarrow fail\ in\ exams(X))$
     d. $\exists X((good\_students(X) \land fail\ in\ exams(X))$

10. The data structures that used in standard implementation of depth first search is
     a. First-in-last out data structures.
     b. First-in-first out data structures.
     c. Linked lists.
     d. Priority queue.

11. The data structures that used in standard implementation of breadth first search is
     a. First-in-last out data structures.
     b. Priority queue.
     c. First-in-first out data structures.
     d. Linked lists.

12. Which of the following search strategy searches the state space blindly?
     a. Uninformed search.
     b. Informed search
     c. Constraint satisfaction search.
     d. Adversarial search.

13. An example of goal driven search is
     a. Solving Traveling Salesman Problem (TSP).
     b. Solving 8-Puzzle game.
     c. Finite state machine acceptor
     d. Graph search.

14. Which of the following is not a property of data driven search?
     a. Data is given in the problem statement.
     b. Generates new facts from the problem facts.
     c. Generates path that satisfies the goal conditions.
     d. Asks the system to provide low level interpretation from the given data.

15. Translate the following English sentences into Predicate Logic (FOL) and Vice-Versa.

    a.   Anytime it is foggy, anyone can travel if he has some source of light.

    b.   Ahmed does not own a house.

    c. $\forall X\, \exists Y (car(X) \rightarrow driven(X,Y))$

    d.   If you unify p(a,X) and p(Y,f(Y)), what are the values of X and Y?

16. from Riyadh (start state) to Madinah (goal state). Where your trace must show the open and close lists, show your solution path and order sequence.
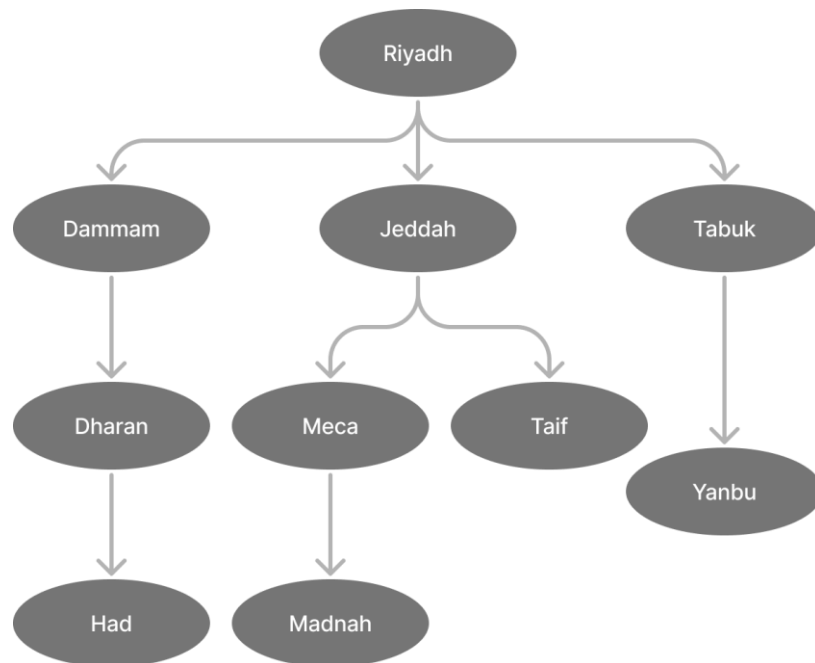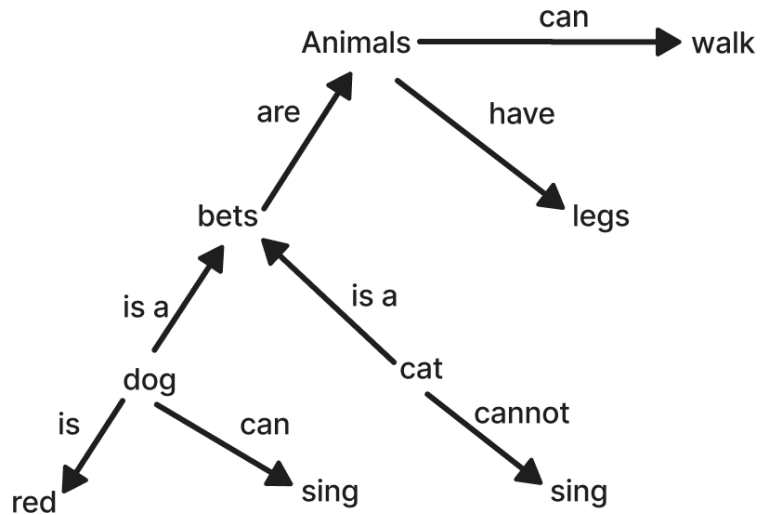

17. Show the difference between data driven search and goal driven search? Give an example for each type of search?
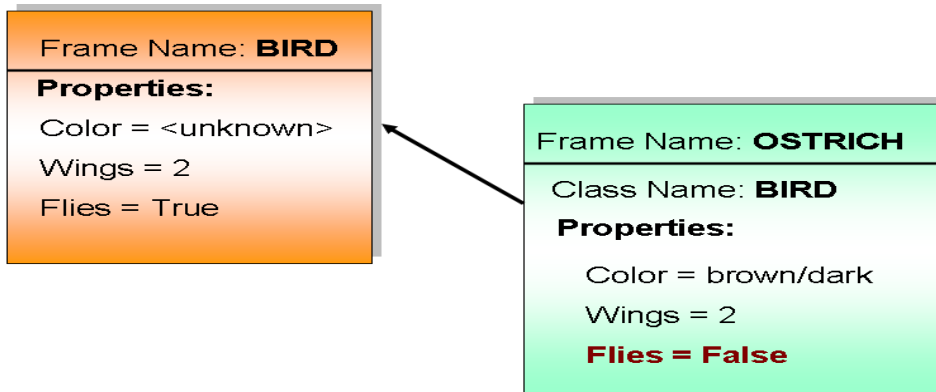
MED2:

1. For the next predicate calculus, Draw the conceptual graph?

$$Eat(john, soup) \wedge use(john, hand)$$

2. In the following semantic Network, write two predicate calculus?

3. In the following 'Frame' example, write two sentences that can be Inferred?


4. ___ is good because it does not get trapped in dead ands.
   a. Depth first
   b. Breadth first
   c. Best-First Search
   d. A* Algorithm

5. It is not of A* Algorithm Properties.
   a. Complete
   b. Optimal
   c. Time is O(b^d) nodes
   d. Space complexity is O(b^m)

6. It is not of Best-first Properties.
    a. Complete
    b. Optimal
    c. Time is O(b^d) nodes
    d. Space complexity is O(b^d)

7. It is not a part of Heuristic search
    a. Hill climbing
    b. Breadth first
    c. Greedy Search
    d. A* Algorithm

8. in conceptual graph, if a graph contains two duplicate relation, then one of them may be deleted, along with all its arcs What this operator is called?
    a. Copy
    b. Join
    c. Restrict
    d. Simplify

9. A Schank breaks the script into a sequence of ___ each of which presents a temporal aspect of the script
    a. rules
    b. nodes
    c. slots
    d. scenes

10. One of the properties of Semantic Networks is called, 'Inference'. What does it refer to?
    a. describe facts or concepts
    b. describe associations between concepts
    c. find a path between nodes
    d. describe facts or concepts

11. In Conceptual graphs ellipse nodes represent
    a. relations
    b. Concepts
    c. Objects
    d. They don't use ellipse nodes

12. The following conceptual graph represents a sentence in English which is
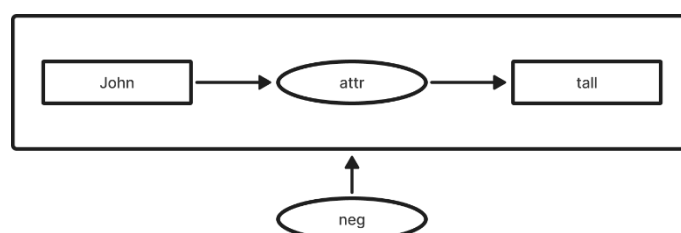
a. John is tall
b. Cannot be determined
c. John is not tall
d. John should be tall

13. if A is a set with 3 elements and B is a set with 4 element and the intersection between them is 1 element then the union between A and B is:
    a. 6
    b. 5
    c. 4
    d. 7

14. if given A is a set {1, 2, 3} and B is a set {3, 5, 6} then $|A \times B|$ by using the multiplication principle of counting is
    a. 9
    b. 6
    c. 3
    d. 8

15. How many three digits numbers can be formed using only 1, 2, 3 ?
    a. 26
    b. 27
    c. 9
    d. 18

16. Uncertainty is essentially is ...... to formulate the decision
    a. Min of information
    b. Need amount information
    c. Max of information
    d. Lack of information

17. Which of the following components of Expert System performs the recognize-act control cycle?
    a. User interface
    b. Explanation sub-system
    c. Knowledge-base
    d. Inference engine

18. In the following Venn diagram, where R represents rain, W represents wind, and C represents cloud. Answer the following questions?
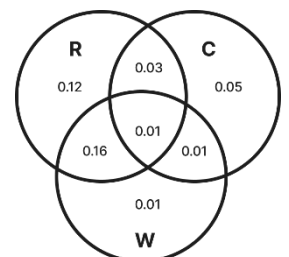
    a. What is the probability to have both a rainy day and not having a cloud?

    b. What is the probability to have a rainy day if there isa wind P(R|W) ?

    R   0.03   C
    0.12   0.05
        0.01
    0.16   0.01
        0.01
        W