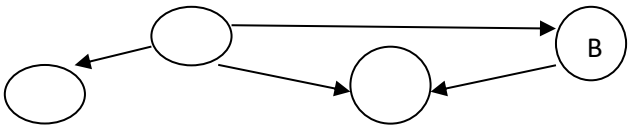
Set 1

			CO	BL	PO	Marks
1	a)	Draw a semantic network representing the following knowledge: Every vehicle is a physical object. Every car is a vehicle. Every car has four wheels. Electrical system is a part of car. Battery is a part of electrical system. Pollution system is a part of every vehicle. Vehicle is used in transportation . Suzuki is a car.	4	3	1, 2, 3, 9	6
	b)	Draw an extended semantic network for representing the following English text and infer the conclusion. Everyone who sees a movie in a theatre has to buy a ticket. A person who does not have money cannot buy a ticket. John sees a movie. Conclude that John had money.	4	3	1, 2, 3, 9	4
2	a)	Illustrate the different phases in building an expert system.	5	2	1, 2, 3, 9	6
	b)	Implement expert system for planning a vacation trip.	5	4	1, 2, 3, 9	4
3		For the Bayesian network given below and the corresponding probabilities  P(A) = 0.4 , P(B|A) = 0.5, P(B|~A) = 0.1, P(C|A)=0.6, P(C|~A) = 0.3, P(D|A,B) = 0.8, P(D|A,~B) = 0.3,P(D|~A,B) = 0.3, P(D|~A~,B) = 0.05 i) Generate the conditional probability table ii) Compute P(A,B,C,D) iii) Compute P(A|B) iv) Compute P(A|C) v) Compute P(A|B,C)	6	3	3, 5, 9	10

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Set-2

			CO	BL	PO	Marks
1	a)	Develop a complete Frame Based System for University applications.	4	4	1, 2, 3, 9	5
	b)	Demonstrate how Extended Semantic Network can be used for Knowledge Representation.	4	3	1, 2, 3, 9	5
2		How is an expert system different from a traditional program? How is a production system different from an expert system? Describe the knowledge acquisition component of ES.	5	3	1, 2, 3, 9	10

3		Suppose we are given MB[H_1,E] = 0.6 and MB[H_2,E]=0.4, MD[H_1,E] = 0.3 and MD[H_2,E]=0.5. Using the given data compute the following: i) MB[H_1 and H_2,E] ii) MD[H_1 and H_2,E] iii) CF[H_1 and H_2,E] iv) MB[H_1 or H_2,E] v) MD[H_1 or H_2,E] vi) CF[H_1 or H_2,E]	6	3	3, 5, 9	10

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Set 3

			CO	BL	PO	Marks
1	a)	Demonstrate how Knowledge can be represented using Semantic Network.	4	3	1, 2, 3, 9	6
	b)	Create a network of frames(NOF) with ako, a_part_of, and inst links with the following characteristics: i) Insert a frame in NOF with all slots value filled up. ii) Delete a frame from NOF. iii) Update the value of the slot of a given frame. iv) Query model to ask questions using FBS.	4	3	1, 2, 3, 9	4
2		Consider the knowledge base given below. Perform forward and backward chaining to satisfy the goal. R1: if A then B R2: if C then E R3: if A and C then F R4: if B and E then D Facts: A,C Goal: D	5	3	1, 2, 3, 9	10
3		Consider the mutually exclusive hypotheses represented by a set U={viral, measles, mumps, cough, conjunctivitis} in diagnostic system. Suppose we have measure s belief function 'm1' based on evidence of fever as m1({viral, measles, mumps})=0.85 and 'm2' function based on evidence of fever and headache, respectively; also m2({viral, conjunctivitis})=0.6. Combine the given belief functions to generate an m3 function using Dempster's rule.	6	3	3, 5, 9	10

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