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# Question Paper Code: 45284

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

#### Sixth Semester

## Software Engineering

### ESE 062 — ARTIFICIAL INTELLIGENCE

(Regulation 2010)

Time: Three hours

Maximum: 100 marks

## Answer ALL questions.

$$PART A - (10 \times 2 = 20 \text{ marks})$$

- 1. What are the approached followed to have AI?
- 2. What is heuristic search?
- 3. List out the components of first order logic.
- 4. Define: Frame.
- 5. State Bayes theorem.
- 6. Write about Dempster-Shafer theory.
- 7. What is parsing technique?
- 8. What is agent?
- 9. Define the term learning.
- 10. What is inductive bias?

PART B — 
$$(5 \times 16 = 80 \text{ marks})$$

11. (a) Discuss the principles of State space search with a neat example.

Or

(b) List down all the features of PROLOG with examples to show that it is suitable or implementation of AI related problems.

12.	(a)	Explain about semantic network with its architecture and explain how it is used for knowledge representation.
-		$\mathbf{Or}$
	(b)	(i) Given:
•		(1) Marcus was a man.
		(2) Marcus was a Pompeian.
		(3) All Pompians were Romans.
		(4) Caesar was a ruler.
		(5) All Romans were either loyal to Caesar or hated him.
		(6) Everyone is loyal to someone.
	•	(7) People only try to assassinate rulers they are not loyal to.
		Answer the following questions:
		(A) Represent the above sentences in Predicate Logic. (7)
		(B) Can we make a conclusion as "Marcus was not loyal to Caesar?" (4)
	1	(ii) Explain the rules of Conceptual dependency with suitable example. (5)
13.	(a)	Describe the applications of Bayesian networks for reasoning.
		$\dot{\mathbf{Or}}$
	(b)	(i) What is Truth Maintenance System (TMS)? How does it help? (10)
		(ii) Consider the following sentences: (6)
		• All ostriches are birds
		• Tweety is a bird
		• Sam is not an Ostrich
		Answer the following using non-monotonic reasoning methods:
	•	(1) Is Sam is a bird?
14.	(a)	Explain the architecture of model based reflex agent and goal based agent.
	•	$\mathbf{Or}$
•	(b)	Discuss briefly the various stages in natural language processing with suitable examples.
15.	(a)	Write notes on the Knowledge Acquisition technique in expert system.
		$\mathbf{Or}$

Discuss the different types of non production system architecture.