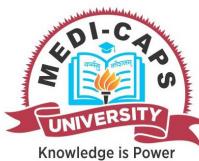


**Enrollment No.....**



Programme: B.Tech.

Branch/Specialisation: RA

Faculty of Engineering  
End Sem Examination Dec 2024  
RA3EL07 Artificial Intelligence

**Duration: 3 Hrs.**

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

	[2]		[3]
v.	Where does the dependance of experience is reflected in prior probability sentences? (a) Syntactic distinction (b) Semantic distinction (c) Both (a) and (b) (d) None of these	1 1 3 1 1	iii. Write the difference between breadth first search and depth first search. <b>5</b> 4 1 1 1
vi.	How many terms are required for building a bayes model? (a) 1 (b) 2 (c) 3 (d) 4	1 1 3 1 1	Q.3 i. What is knowledge representation? Explain the types of knowledge. <b>4</b> 2 2 1 1 ii. Differentiate between propositional logic and first-order predicate logic. <b>6</b> 4 2 1 1
vii.	Which of the following includes major tasks of NLP? (a) Automatic summarization (b) Discourse analysis (c) Machine translation (d) All of these	1 1 4 1 1	OR iii. Write short notes: (a) Refutation in AI (b) Inferencing in AI <b>6</b> 2 2 1 1
viii.	What is state space? (a) The whole problem (b) Your definition to a problem (c) Problem you design (d) Representing your problem with variable and parameter	1 1 4 1 1	Q.4 i. Differentiate between forward and backward referencing. <b>4</b> 4 3 1 1 ii. Write a script for “Going to waterpark for friend’s birthday party”. <b>6</b> 4 3 1 1
ix.	Which is true for neural networks? (a) It has set of nodes and connections (b) Each node computes it’s weighted input (c) Node could be in excited state or non-excited state (d) All of these	1 1 5 1 1	OR iii. Write short notes: (a) Frame (b) Semantic network <b>6</b> 2 3 1 1
x.	Which of the following are components of expert systems? (a) Knowledge base (b) Inference engine (c) User interface (d) All of these	1 1 5 1 1	Q.5 i. Explain natural language processing and write its applications. <b>4</b> 2 4 1 1 ii. Explain briefly the some of the refinement techniques used in minimax search procedure. <b>6</b> 2 4 1 1
			OR iii. Explain the block world problem in robotics. <b>6</b> 2 4 1 1
Q.2	Attempt any two: i. Define artificial intelligence and write its advantages and disadvantages. ii. Explain the A* (A star) algorithm with suitable example.	5 2 1 1 1	Q.6 i. Attempt any two: i. Write the comparison between artificial neural network and biological neural network. <b>5</b> 4 5 1 1 ii. Write various techniques used in learning. Explain anyone of them. <b>5</b> 2 5 1 1 iii. Write various applications of neural networks. <b>5</b> 3 5 1 1

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**Marking Scheme**  
**RA3EL07 Artificial Intelligence**

Q.1	i.	(c) Learning	1
	ii.	(a) Forward from the initial state	1
	iii.	(c) II and III	1
	iv.	(a) Representational verification	1
	v.	(b) Semantic distinction	1
	vi.	How many terms are required for building a bayes model? (c) 3      (d) 4	1
	vii.	(d) All of these	1
	viii.	(d) Representing your problem with variable and parameter	1
	ix.	(d) All of these	1
	x.	(d) All of these	1
		Attempt any two:	
Q.2	i.	Definition advantages disadvantages.	1 mark 2 mark 2 mark
	ii.	Diagram Equation Explain	1 mark 1 mark 3 mark
	iii.	At least 5 difference	5 mark
Q.3	i.	Definition types of knowledge.	1 mark 3 mark
	ii.	Minimum 4 difference	1.5x4 = 6 marks
OR	iii.	Each note: (a) Refutation in AI (b) Inferencing in AI	3 marks

Q.4	i.	Minimum 4 difference	4 marks	4
	ii.	Script	6 marks	6
OR	iii.	Each short note:	6 marks	6
Q.5	i.	Natural language processing applications.	2 marks 2 marks	4
	ii.	$\alpha\beta$ pruning Diagram	4 marks 2 marks	6
OR	iii.	Rule Code Diagram/ Explanation	2 marks 2 marks 2 marks	6
		Attempt any two:		
Q.6	i	Minimum 5 Difference artificial neural network and biological neural network.	5 marks	5
	ii	Techniques Explanation	2 marks 3 marks	5
	iii	Minimum 5 applications	5 marks	5

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