CSE02

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RAMAIAH
INSTITUTE OF TECHNOLOGY

(Autonomous Institute, Affiliated to VTU)
(Approved by AICTE, New Delhi & Govt. of Karnataka)
Accredited by NBA & NAAC with 'A' Grade

SEMESTER END EXAMINATIONS – JANUARY 2018

Course & Branch	**:**	**B.E. : Computer Science & Engineering**	**Semester**	**:**	**V**
Subject	**:**	**Artificial Intelligence**	**Max. Marks**	**:**	**100**
Subject Code	**:**	**CSE02**	**Duration**	**:**	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.
- Draw diagrams wherever necessary.

UNIT- I

1.	a)	With a neat diagram explain agents interact with environment through sensors and actuators.	CO1	(06)
	b)	Explain PEAS description of the following: i. Medical diagnosis system ii. Refinery controller.	CO1	(08)
	c)	Write an algorithm for recursive best first search.	CO1	(06)
2.	a)	What are the properties of task environments and explain.	CO1	(08)
	b)	With respect to informed search strategies answer the following: i. Heuristics for the 8-puzzle problem ii. Optimality of A* search.	CO1	(12)

UNIT- II

3.	a)	Given the statements: "Anyone passing his history exams and winning the lottery is happy. Anyone who studies or is lucky can pass all his exams. John did not study but he is lucky. Anyone who is lucky wins the lottery. Prove by resolution process the statement "John is happy".	CO2	(10)
	b)	Write the primary difference between propositional and first order logic. Mention in tabular form the five different logics and their commitments.	CO2	(10)
4.	a)	Draw and explain the basic structure of a completeness proof for resolution.	CO2	(10)
	b)	Compare and Contrast that "west is a criminal "with proof tree generated by forward chaining and backward chaining. Use the clauses given regarding crime problem. American(west), Enemy(nono, America), owns(nono,M1), Missile(M1), Weapon(M1), Criminal(west), sells(west,M1,nono), hostile(nono).	CO2	(10)

UNIT- III

5.	a)	Define planning graph. Write the PDLL description for have cake and eat cake too problem. Draw the planning graph for it and explain.	CO3	(10)
	b)	Define Entropy. Explain the process w.r.t to flip of a fair coin and for restaurant training set.	CO3	(10)
6.	a)	Define Baye's rule and apply the theorem on the tooth ache problem and show how it is used for combining evidence.	CO3	(12)
	b)	List the properties that make SVM attractive to solve classification problems. Compare it with any other classification algorithms of your choice.	CO3	(08)

UNIT- IV

7.	a)	List the six different approaches for Information Extraction. Mention the complexity dimension taken into consideration for categorization.	CO4	(06)
	b)	Write the differences between attribute based extraction and relational extraction system.	CO4	(06)
	c)	Explain the reason behind choosing conditional random fields for information extraction over Hidden Markov Model (HMM).	CO4	(08)
8.	a)	Identify the role of damping factor in Page Rank algorithm and write a note on ASKMSR system.	CO4	(10)
	b)	Convert the sentence " There is a smelly wumpus sleeping in [2,2]" into French. Draw and explain the bilingual translational model.	CO4	(10)

UNIT- V

9.	a)	Match the following part A with Part B:	CO5	(06)

Part A	**Part B**
i. Whiskers, bump panels, and touch-sensitive skin	i. shaft decoders
ii. measures the distance to satellites that emit pulsed signals	ii. Inertial sensors
iii. inform the robot of its own motion	iii. odometry
iv. gyroscopes	iv. GPS
v. count the revolution of motors in small increments.	v. tactile sensors
vi. the measurement of distance traveled	vi. proprioceptive sensors.

	b)	Identify a technique that makes a perfect perception for a robot.	CO5	(05)
	c)	Describe the hybrid and pipeline robot software architecture.	CO5	(09)
10.	a)	Is it necessary to consider the discourse and pragmatic context in which sentences are uttered? List the number of important relationships, phrases and parts of their discourse contexts with relevant examples.	CO5	(10)
	b)	List and explain spell checking techniques and Soundex algorithm for effective spell checking.	CO5	(10)

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