VR Siddhartha Engineering College
Department of Information Technology

20IT5205A - AI TOOLS, TECHNIQUES AND APPLICATIONS
CBCS: Assignment-1 question bank
A.Y:2021-22/Sem-2

Q.No		Question	Course Outcome	BTL
1	a	Define Knowledge_based agent and elucidate it with neat architecture (Ref: PPT and YOUTUBE)	CO1	Understand
	b	Explain Back-tracking and Arc consistency search algorithm in detail in CSP with an any application. (Ref: textbook, YouTube and PPT)	CO1	Apply
2	a	Discuss the role of AI in dealing with current problems (Ref: textbook pg no 68 and internet)	CO1	Understand
	b	Give the differences between propositional logic and predicate logic with an example. (Internet and ppt and textbook)	CO1	Understand
3	a	Given that probability of a statement 'John has a viral' is 0.20, probability of john being observed sneezing when he had viral is 0.8 and probability of John being observed sneezing when he did not has a viral is 0.2. Find the probability that john having viral if he is sneezing. (Ref: Practice on logic and reasoning basic problems)	CO1	Apply
	b	Show that the 8-puzzle states are divided into two disjoint sets, such that n'o state in one set can be transformed into a state in the other set by any number of moves. (Hint: See Berlekamp et al. (1982).) Devise a procedure that will tell you which class a given state is in, and explain why this is a good thing to have for generating random states. (REFERENCE : Own thinking and practice and text book pg 71 and YouTube)	CO1	Apply
4	a	How to provide the solutions for Well-defined problems. (Reference : Text book pg no: 62-68)	CO1	Remember
	b	Write about any two Uninformed Search Strategies (Reference : Text book and YOU TUBE)	CO1	Understand

5	a	Implement two versions of the successor function for the 8-puzzle: one that generates all the successors at once by copying and editing the 8-puzzle data structure, and one that generates one new successor each time it is called and works by modifying the parent state directly (and undoing the modifications as needed). Write versions of iterative deepening depth-first search that use these functions and compare their performance. (REFERENCE : Own thinking and practice and text book pg 71 and YouTube)	CO1	Apply
	b	What is inference mechanism? Give different propositional inference laws. (Ref: ppt and textbook, internet)	CO1	Remember
6	a	Explain i) Proposition logic ii) First order logic (Ref: Textbook, internet and ppt)	CO1	Understand
	b	Define in your own words the following terms: state, state space, search tree, search node, goal, action, successor function, and branching factor. (Ref: internet, youtube, ppt, textbook)	CO1	Remember

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