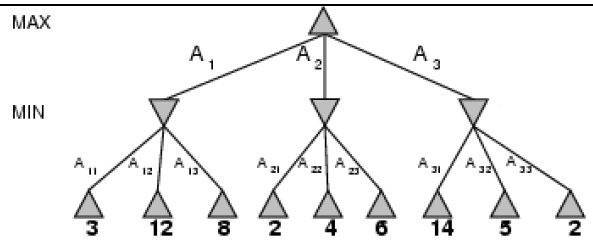
VII Semester BTech Examination DEC 2023	Set No.: 02
Course name: PE-III Artificial Intelligence (CSE)	Course code: CSE 4053

Q. No.	Description	Marks	Course Outcome (1-5)	Competency Levels (1-6)
1A	Analyze the generic characteristics of task environments with examples for each.	**5**	**CO1**	**4**
1B	Recommend the type of agent to be used if it requires a feedback system to improve its performance for the next percept-action sequence. Comment on its specifications with a neat diagram.	**3**	**CO1**	**3**
1C	Compare and contrast the terms - Omniscient agent and Rational agent.	**2**	**CO1**	**4**
2A	Compare and assess the "cognitive modelling approach" and "laws of thought approach" of Artificial Intelligence. Specify real time examples for each.	**5**	**CO1**	**4**
2B	Inspect the performance of Breadth First Search and Uniform Cost Search Algorithm. Relate the characteristics and performance analysis with the help of an example.	**3**	**CO2**	**3**
2C	Justify the statement – "Breadth First Search is a complete algorithm compared to Depth First Search".	**2**	**CO2**	**4**
3A	Justify the statement "Goal Formulation is the first step in Problem Formulation". Elaborate the components involved in defining a problem.	**5**	**CO2**	**4**
3B	"A game can be formally defined as a kind of search problem." Justify with an example.	**3**	**CO3**	**4**
3C	Convert the following statements to First Order Logic. [Use: Kid(x),Cake(y), Eats(x,y)] i. Every kid eats some cake ii. Some kid eats some cake	**2**	**CO4**	**3**
4A	Given the following search tree. Apply the alpha-beta pruning algorithm to it and show the resultant search tree. Specify the criteria used. Make sure that you show the alpha and beta values for each min and max nodes and show the pruned nodes and the paths in dotted lines. Note: The upright triangle nodes are max nodes and inverted triangle nodes are min nodes.	**5**	**CO3**	**3**

				
4B	Articulate the models of proposition logic and first order logic with examples for each.	**3**	**CO4**	**4**
4C	Convert the following to CNF form and list all the clauses in use. i. ((P -> Q) -> Q) -> R ii. (~P -> Q) ^ (R ^ ~P)	**2**	**CO4**	**3**
5A	Discuss the internet shopping world and the process of encoding the knowledge for a shopping research agent that helps a buyer find product offers on the Internet.	**5**	**CO5**	**2**
5B	Demonstrate the technique used for determining entailment of sentences.	**3**	**CO4**	**2**
5C	State the principle of maximum expected utility and the role of categories in knowledge representation.	**2**	**CO5**	**2**

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*** This format is to be used only for e-pad exam question paper**