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**Question Paper Code: 95C04**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Sixth Semester

Computer Science and Business Systems

19UCB603-ARTIFICIAL INTELLIGENCE

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5Marks)

1. The action of the Simple reflex agent completely depends upon \_\_\_\_\_ CO1-U  
(a) Perception history (b) Current perception (c) Learning theory (d) Utility functions
2. The process of removing detail from a given state representation is called \_\_\_\_\_ CO1-U  
(a) Extraction (b) Abstraction (c) Information Retrieval (d) Mining of data
3. Which is used to improve the performance of heuristic search? CO1-U  
(a) Quality of nodes (b) Quality of heuristic function  
(c) Simple form of nodes (d) None of the mentioned
4. \_\_\_\_\_ are mathematical problems defined as a set of objects whose state must satisfy a number of constraints CO1-U  
(a) Constraints Satisfaction Problems (b) Uninformed Search Problems  
(c) Local Search Problems (d) All of the mentioned
5. Which of the following is not the style of inference? CO1-U  
(a) Forward Chaining (b) Backward Chaining (c) Modus Ponens (d) None of these

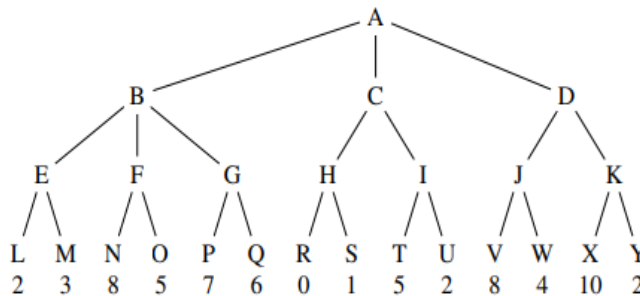
PART – B (5 x 3= 15Marks)

6. What are the capabilities, computer should possess to pass Turing test? CO1- U
7. What is the difference between a world state, a state description, and a search node? CO1 -U
8. State the significance of using heuristic functions. CO1- U

9. Define constraint propagation CO1-U
10. What factors justify whether the reasoning is to be done in forward or backward reasoning? CO1-U

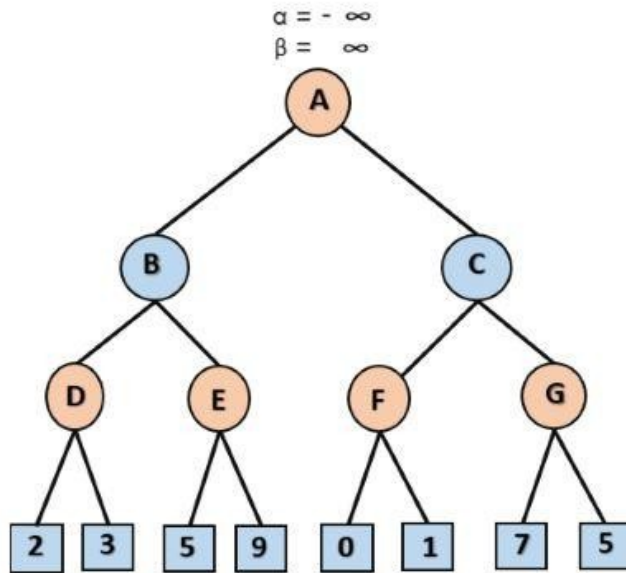
PART – C (5 x 16= 80 Marks)

11. (a) Explain in detail about the types of agent with neat diagram CO1-U (16)  
 Or  
 (b) Describe in detail about the types of task environment CO1 -U (16)
12. (a) Write a short notes on state space representation and explain the terms goal test, path, initial state and successor function CO1-U (16)  
 Or  
 (b) “Production systems determine the course of action in particular situation” – Justify CO1 -U (16)
13. (a) Discuss in detail about Greedy best-first search and A\* search with a relevant example. CO1-U (16)  
 Or  
 (b) Compare and contrast breadth first search and Depth first search with an example CO1-U (16)
14. (a) Consider the following game tree in which the utility values are all from the first player’s point of view. Assume that first player is the maximizing player also explain in detail about the steps involved in MiniMax algorithm CO2- App (16)



Or

- (b) Consider the following game tree in which the utility values are all from the first player's point of view. Assume that first player is the maximizing player. explain in detail about the steps involved in Alpha Beta pruning CO2-App (16)



15. (a) Illustrate first order logic to represent Knowledge with examples CO1-U (16)  
 Or  
 (b) Discuss the problems in resolution using prepositional logic and illustrate predicate logic with suitable Examples CO1-U (16)

