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Reg. No. | | | | | | | | |

V Semester B.C.A. Degree Examination, March/April - 2022

COMPUTER SCIENCE

Artificial Intelligence

(CBCS - Scheme)

Paper : BCA 502 T

Time : 3 Hours **Maximum Marks : 100**

Instructions to Candidates:

Answer all sections.

SECTION - A

Answer any **Ten** questions. Each question carries **2** marks. **(10×2=20)**

1. Define heuristic function.
2. Define Means End Analysis.
3. Define Truth Maintenance System.
4. Draw the Semantic net for
   - Sree is a girl
   - She has black hairs
   - Girls are human beings
   - All human beings are animals
5. What is Propositional Logic?
6. List any four predicates used in Block world problem.
7. Define declobbering.
8. List the factors affecting learning performance.
9. What are perceptrons?
10. Define Artificial Neural Network.
11. What is syntactic analysis?
12. What is MYCIN?

SECTION - B

Answer any **Five** questions. Each question carries **5** marks. **(5×5=25)**

13. Define Artificial Intelligence. Write briefly the four approaches to AI.
14. Write a note on informed and uninformed searching.

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15. Express the following English statements in FOPL.

    i. Rama had all kinds of weapons.

    ii. Rama was a ruler.

    iii. Rama is married to Sita.

    iv. Rama killed Ravana.

    v. All people loved Rama.

16. What are frames? Explain with an example.

17. Write the Non linear planning algorithm.

18. Write a note on supervised and Un supervised learning.

19. Write the production rules and draw a parse tree for the statement "Jack slept on the table".

20. Explain the Recursive Transition Network method.

SECTION - C

Answer any **Three** questions. Each question carries **Fifteen** marks. (3×15=45)

21. a. Define Neural Network. Explain different types of neural network. (8)

    b. Explain the Best First search method with an example. (7)

22. a. Write a note on Fuzzy logic. (7)

    b. What is a script? Write a script of visiting a doctor in a hospital. (8)

23. a. With an example, explain Goal - stack planning. (8)

    b. Briefly explain any two Robot architectures. (7)

24. a. With a neat diagram, explain the General Learning Model. (8)

    b. Briefly explain the steps involved in natural language processing. (7)

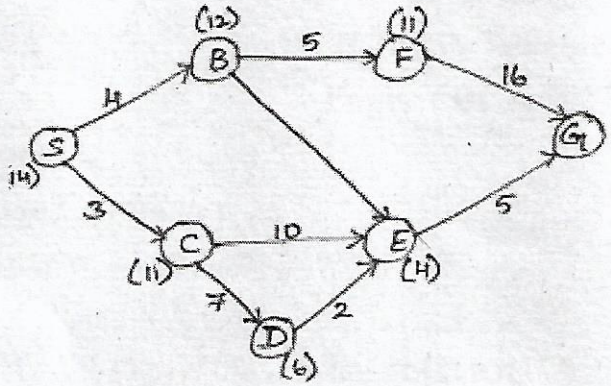
25. a. Explain Alpha - Beta pruning with suitable example. (8)

    b. Explain Block world problem. (7)

SECTION - D

Answer any **One** questions. Each question carries **Ten** marks. **(1×10=10)**

26. Using A* algorithm, find the optimal path for the following graph.



Where S is the initial state and G is the goal state

27. Explain the structure of Expert system with its limiations and applications.