2021/TDC (CBCS)/EVEN/SEM/ CSCHCC–601T/107

TDC (CBCS) Even Semester Exam., September—2021

COMPUTER SCIENCE

(6th Semester)

Course No. : CSCHCC–601T

(Artificial Intelligence)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. What is AI? Write two main goals of AI.

2. Write the main four rules for an AI agent.

3. What is a national agent in AI?

4. Why is turing test important in AI?

5. Write down the three factors on which AI search problem depends.

(*Turn Over*)

6. What problems can be solved using heuristic search techniques?

7. What is the best first search in AI?

8. What are the causes of hill climbing search?

9. How is unification code algorithm useful in resolution?

10. What are predicate and propositional logic in AI?

11. How does resolution check the validity of the statement?

12. What type of applications one can develop using printing?

13. Write down the formula of Bayesian probability.

14. Define probabilistic reasoning in AI.

15. What is AI inference?

16. Why do we need Truth Maintenance System (TMS) in AI?

17. What is the role of Natural Language Processing in AI?

18. Give an example of ambiguous grammar.

19. What is augmented transition network?

20. Define transformational grammar with an example.

SECTION—B

Answer any *five* of the following questions : 6×5=30

21. Discuss the major applications of AI.

22. What is intelligent agent? Discuss the structure and behaviour of an intelligent agent.

23. Trace the CSP for solving the following cryptoarithmetic problem :

$$
\begin{array}{r}
\text{SEND} \\
+ \text{MORE} \\
\hline
\text{MONEY}
\end{array}
$$

24. Discuss A^* algorithm with an example.

(4)

25. Write the prolog code to—
    (a) calculate the *n*th Fibonacci number;
    (b) remove *n*th item from the list.

26. Given the following facts :

    Marcus was a man.
    Marcus was a Pompeian.
    All Pompeians were Roman.
    Caesar was a ruler.
    All Romans were either loyal to Caesar or hated him.
    Everyone is loyal to someone.
    People only try to assassinate ruler they are not loyal to.
    Marcus try to assassinate Caesar.
    All men are people.

    Find the following :
    (a) Is Marcus loyal to Caesar?
    (b) Did Marcus hate Caesar?

27. Differentiate between forward and backward reasoning.

28. Discuss the different types of inference rules.

29. Give the formal definition of CFG. Also write its applications.

30. Write a note on top-down and bottom-up parsing.

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TDC (CBCS) Even Semester Exam.,
September—2021

ECOLOGY AND ENVIRONMENTAL SCIENCE

(6th Semester)

Course No. : EESDSE–601T

(Natural Hazards and Disaster Management)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *fifteen* of the following questions :

1×15=15

1. What is hazard?

2. What is atmospheric hazard?

3. What are the two main types of disaster?

4. Define seismology.

(Turn Over)