Q.P. Code – 68606

Sixth Semester B.C.A. Degree Examination, April/May 2019

(CBCS Scheme)

Computer Science

ARTIFICIAL INTELLIGENCE

Time : 3 Hours] *[Max. Marks : 90*

Instructions to Candidates : ALL Sections are compulsory.

SECTION – A

Answer any **TEN** of the following. **(10 × 1 = 10)**

1. What is an intelligence?

2. Define task.

3. What is ideal rational agent?

4. Define A^* search.

5. What is space complexity?

6. What is fuzzy logic?

7. What is Natural Language Processing (NLP)?

8. Define morphology.

9. What are expert systems?

10. What is robotics?

11. What are artificial neural networks?

12. Mention the types of artificial neural network topologies.

SECTION – B

Answer any **FIVE** of the following. **(5 × 3 = 15)**

13. What is an AI technique? Mention any two applications of AI.

14. Explain the following agent terminologies :

    (i) Behaviour of agent

    (ii) Agent function

    (iii) Performance measure of agent.

15. Differentiate between BFS and DFS.

16. Mention any three disadvantages and advantages of fuzzy logic.

17. Mention the difficulties in NLP.

18. What are the benefits of expert systems?

19. What are the components of a robot?

SECTION – C

Answer any **SIX** of the following. **(6 × 5 = 30)**

20. Describe the types of intelligence.

21. What are the properties of environment?

22. Explain the travelling salesman problem in AI.

23. Write and explain the fuzzy logic systems architecture.

24. Define content-free grammar with its merits and demerits.

25. What are the components of NLP?

26. Explain the components of expert systems.

27. Explain Bayesian Networks (BN).

SECTION – D

Answer any **FIVE** of the following. **(5 × 7 = 35)**

28. Explain the task classification of AI in detail.

29. Explain the search terminologies. Write an algorithm for simulated annealing.

30. Explain in detail the steps in NLP.

31. Explain in detail the general steps in the development of expert systems.

32. Explain in detail about robot locomotion.

33. (a) Write and explain the structure of biological neurons.

    (b) Explain the types of machine learning in detail. **(4 + 3)**

34. Write and explain the applications of neural network.
