

XYZ UNIVERSITY
BCA – Semester 6
Subject: Artificial Intelligence
Time: 3 Hours
Maximum Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Draw neat diagrams wherever required.
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SECTION – A (Short Answer)

Answer any FIVE questions. ($5 \times 2 = 10$)

1. What is Artificial Intelligence?
 2. Define Machine Learning.
 3. What is supervised learning?
 4. What is an expert system?
 5. Define Natural Language Processing (NLP).
 6. What is data preprocessing?
 7. What is the difference between AI and ML?
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SECTION – B (Descriptive)

Answer any FOUR questions. ($4 \times 5 = 20$)

8. Explain the types of Artificial Intelligence with examples.
 9. Describe the steps involved in Machine Learning.
 10. What is overfitting? How can it be avoided?
 11. Explain the concept of Deep Learning.
 12. Discuss applications of Artificial Intelligence.
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SECTION – C (Long Answer)

Answer any TWO questions. ($2 \times 10 = 20$)

13. Explain the architecture of an Expert System with a neat diagram.
 14. Describe supervised and unsupervised learning in detail.
 15. Explain Artificial Neural Networks and their applications.
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SECTION – D (Case Study)

Answer any ONE question. (1 × 20 = 20)

16. A company wants to build an AI-based chatbot for customer support.

- a) What AI techniques will you use?
- b) What data is required to train the chatbot?
- c) What challenges may arise during implementation?

END OF QUESTION PAPER