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**BCA-MCA Dual Degree (Semester –5<sup>th</sup>)**

**ARTIFICIAL INTELLIGENCE**

**Subject Code: BCMC527**

**Paper ID: 18340121**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a. What is Artificial Intelligence (AI) in simple terms?
- b. Name two examples of AI applications we use in daily life?
- c. What is a chatbot, and how does it work?
- d. Explain the difference between human intelligence and machine intelligence.
- e. What is machine learning, and how is it related to AI?
- f. What is the role of data in AI systems?
- g. What are the main goals of AI?
- h. What are expert systems in AI? Provide an example?
- i. Explain what a robot is and how AI is used in robotics?
- j. What is Natural Language Processing (NLP) in AI?

**Section – B**

**(5 marks each)**

- Q2. What are the main types of AI, and how are they applied in different industries?
- Q3. How do AI-powered recommendation systems, like those used by Netflix or Amazon, work.
- Q4. What is the difference between supervised learning and unsupervised learning in AI?
- Q5. Explain the basic concept of machine vision and how AI helps computers understand images?
- Q6. Explain the AO algorithm in constraint satisfaction problems and discuss its effectiveness.

**Section – C**

**(10 marks each)**

- Q7. Explain how AI is transforming healthcare, specifically in diagnostics and treatment planning.
- Q8. What is deep learning, and how is it different from traditional machine learning?
- Q9. Describe the methods and tools used for knowledge acquisition and validation in expert systems.