

S.No. : 627

NCS4102

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

**PAPER ID : 43202**

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No.

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## B. Tech Examination 2023-24

(Odd Semester)

### BASICS OF ARTIFICIAL INTELLIGENCE

*Time : Three Hours]*

*[Maximum Marks : 60*

**Note :-** Attempt all questions.

#### SECTION - A

1. Attempt all parts of the following :  $1 \times 8 = 8$

- (a) What are the different domains of AI?
- (b) Give some real-world applications of AI.
- (c) What is game theory?
- (d) Explain the global search algorithm.
- (e) What are the two basic types of inference?

*[P. T. O.]*

- (f) Which inference rule is used in forward chaining process in first-order logic?
- (g) Explain ethical issues in AI.
- (h) Write some application of artificial intelligence in healthcare.

### SECTION – B

2. Attempt any two parts of the following .  $6 \times 2 = 12$
- (a) What is artificial intelligence and classify and state different neural network models?
  - (b) Discuss the following search technique with the help of an example. Also discuss the benefits and shortcoming of each :
    - (i) Breadth first search
    - (ii) Depth first search
  - (c) Which inference rule is used in forward chaining process in first order logic and also write the first four rules of inference.
  - (d) What are the applications of AI in data security? How does AI change people's lives?

### SECTION – C

3. Attempt any two parts from each question. Each part carry equal marks.  $8 \times 5 = 40$
- (a) Explain briefly neural network and its importance in AI.
  - (b) Explain fuzzy system and its applications.
  - (c) What is the intelligent agent in AI and where are they used?
4. (a) What is alpha-beta pruning? Explain working of alpha-beta pruning.
- (b) How artificial intelligence, machine learning and deep learning differ from each other?
  - (c) Which algorithm is used by facebook for face recognition? Explain its working.
5. (a) What is a Bayesian network, and why is it important in AI?
- (b) Write the difference between forward chaining and backward chaining.
  - (c) Explain the various issues in knowledge representation in artificial intelligence.

[ P. T. O. ]