

7E7043	Roll No. _____	Total No of Pages: 2
	7E7043 B. Tech. VII Sem. (Main) Exam., Nov.-Dec.-2016 Electrical & Electronics Engineering 7EX3A Artificial Intelligence Techniques EE, EX	

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks Main : 26
Min. Passing Marks Back: 24

Instructions to Candidates:

Attempt any **five** questions, selecting **one** question from each unit. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. NIL _____

2. NIL _____

UNIT - I

Q.1 (a) Define artificial intelligence. Discuss the area in which application of AI are used. [8]

(b) What are the applications of Artificial Intelligence? [8]

OR

Q.1 (a) What are building tools and shells? Write their importance. [8]

(b) Briefly explain how artificial intelligence techniques can be represented. List out some of task domain of artificial intelligence. [8]

UNIT - II

Q.2 (a) Differentiate between procedural versus declarative knowledge. [8]

(b) How knowledge can be represented using logics rules, frames? [8]

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OR

- Q.2 Discuss the following search techniques with the help of an example. Also discuss the benefit and short comings of each one: [16]
- (a) Breadth first search
 - (b) Depth first search

UNIT - III

- Q.3 (a) Describe biological neuron and synapses. [8]
(b) What are the different types of activation functions? [8]

OR

- Q.3 (a) What are the limitations of perceptrons? [8]
(b) Differentiate between single layer and multilayer perceptrons. [8]

UNIT - IV

- Q.4 (a) What is difference between supervised and unsupervised learning? [8]
(b) What is Kohonen's self organizing map? Explain. [8]

OR

- Q.4 Explain the back propagation algorithm. What are the two different passes of back propagation algorithm? [16]

UNIT - V

- Q.5 (a) What do you mean by membership function with fuzzy set? Also describe various types of membership functions. [12]
(b) What is fuzzy controller? Discuss the basic steps involved in design of fuzzy controller. [4]

OR

- Q.5 (a) Explain the procedure of Genetic Algorithm with example. [8]
(b) Explain the following terms with example in reference to Genetic Algorithm - [8]
(i) Population
(ii) Crossover
(iii) Reproduction
(iv) Mutation