

7E7043	Roll No. <u>14EEBEE060</u>	Total No of Pages: 3
	7E7043 B. Tech. VII Sem. (Main/Back) Exam., Nov. – Dec. - 2017 Electrical & Electronics Engineering 7EX3A Artificial Intelligence Techniques EE, EX	

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 26

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 What is “Artificial Intelligence (AI) and Artificial Technique”? Briefly explain how AI technique can be represented. List out some of the task domain of AI [16]

OR

Q.1 How AI is related with engineering stream? Justify it with suitable examples. What engineering fields are related with AI and what are their role in AI? [16]

UNIT-II

Q.2 (a) How to define a problem as state space search? Discuss with the help of an example. [8]

(b) Discuss the control strategies with example. [8]

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OR

Q.2 Define the following problems:

- (a) The Monkey & Bananas problem [4]
- (b) 7 – Bridges problem [4]
- (c) Cryptarithmic [4]
- (d) 8 – Puzzle problem [4]

UNIT-III

- Q.3 (a) Explain the major application areas of neural networks. [8]
- (b) Explain the different types of artificial neural network of architectures. [8]

OR

- Q.3 (a) Explain the back propagation or error in multilayer neural networks. [8]
- (b) What is perception differentiate single and multilayer neural network? [8]

UNIT-IV

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

OR

- Q.4 (a) Describe :
- (i) Supervised learning [4]
 - (ii) Unsupervised learning [4]
- (b) Explain Kohonen's self organizing map in detail. [8]

UNIT-V

Q.5 (a) Describe concepts & coding for genetic algorithm. [8]

(b) Write short note (any four) : [2×4=8]

(i) Scaling & fitness

(ii) Mutation

(iii) Reproduction

(iv) Population

(v) Crossover

OR

Q.5 Describe fuzzy logic concepts. Also describe fuzzy controllers and discuss various types of membership functions. [16]