

**M.E. (Computer Engineering)
Bio-Inspired Optimization Algorithms
(2017 Course) (Sem - I) (510102)**

Instructions to the candidates:

- 1) Q.No.7 is compulsory, solve any 5 from Q.No.1 to Q.No.6
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1) a) What is natural computing? [1]
 b) Write simulated annealing algorithm. [4]
 c) What is positive feedback? List examples of positive feedback. [3]
- Q2) a) Discuss selection and mutation of Evolutionary Programming [4]
 b) Discuss selection and crossover of Evolutionary Strategies. [4]
- Q3) a) Interpret the biological terminology into Ant colony Optimization and Ant Clustering Algorithm. [4]
 b) Write Ant clustering algorithm. [4]
- Q4) a) Write pseudocode of flower pollination algorithm and discuss idealized rules of flower pollination algorithm. [4]
 b) Discuss self tuning framework and self tuning of firefly algorithm [4]
- Q5) a) Interpret the immunological terminology into the computational domain of AIS. [4]
 b) Illustrate procedure to generate antibodies from gene libraries. [4]
- Q6) a) Discuss architecture of Framstick. [4]
 b) Illustrate boid flocking. [4]
- Q7) a) What is artificial life? What are the goals of artificial life. [4]
 b) Discuss ant system for Travelling salesman problem. [6]

