Assignment 3

The due date for submitting this assignment has passed. Due on 2018-02-28, 23:59 IST.

Submitted assignment

1) In Visualized Interactive Genetic Algorithm (VIGA), a mapping tool is used

- (a) To reduce the number of variables of the problem in order to simplify it
- (b) To decide a set of optimal GA-parameters
- (c) To map the higher dimensional data into a lower dimension for visualization of the surface of objective function
- (d) None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c) To map the higher dimensional data into a lower dimension for visualization of the surface of objective function

2) Which one of the following statements is true regarding Sammon's Non-linear Mapping and VISOR algorithm?

- (a) Both are distance preserving tools
- (b) Both are topology preserving tools
- (c) Sammon's Non-linear Mapping is a distance preserving tool but VISOR algorithm is a topology preserving tool
- (d) Sammon's Non-linear Mapping is a topology preserving tool but VISOR algorithm is a distance preserving tool

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a) Both are distance preserving tools

3) Which one of the following statements is true regarding Sammon's Non-linear Mapping and VISOR algorithm?

- (a) VISOR algorithm can provide well-distributed data points but at the cost of more computation
- (b) Sammon's Non-linear Mapping can provide well-distributed data points but at the cost of more computation
- (c) Sammon's Non-linear Mapping is computationally faster than VISOR algorithm
- (d) VISOR algorithm is a better tool compared to Sammon's Non-linear Mapping in terms of the quality of the distributed data points

No, the answer is incorrect.
Score: 0

Accepted Answers:
(a) VISOR algorithm can provide well-distributed data points but at the cost of more computation
4) Which one of the following statements is true regarding Self-organizing Map (SOM) and VISOR algorithm?  
- (a) VISOR algorithm is a better tool compared to SOM in terms of the quality of mapped data  
- (b) SOM is a better tool compared to VISOR algorithm in terms of the quality of mapped data  
- (c) SOM is computationally faster than the VISOR algorithm  
- (d) Computational complexity of these two algorithms cannot be compared  

Accepted Answers:
(b) Sammon's Non-linear Mapping can provide well-distributed data points but at the cost of more computation

Score: 0

Accepted Answers:
(b) SOM is a better tool compared to VISOR algorithm in terms of the quality of mapped data

5) In a Traveling Salesman Problem (TSP) involving n cities, a person will have to touch each city once by covering the minimum distance. The total number of possible sequences to be checked before declaring the optimal one is 

- (a) $n^2$  
- (b) $nC_2$  
- (c) $n!$  
- (d) $nP_2$

Accepted Answers:
(c) $n!$

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c) $n!$

6) A self-organizing map (SOM) works based on the principle of unsupervised learning using the following operators in a sequence of 

- (a) Updating, Competition, Cooperation  
- (b) Competition, Cooperation, Updating  
- (c) Updating, Cooperation, Competition  
- (d) Competition, Updating, Cooperation

Accepted Answers:
(b) Competition, Cooperation, Updating

No, the answer is incorrect.
Score: 0

Accepted Answers:
(b) Competition, Cooperation, Updating

7) To ensure an efficient GA search, 

- (a) Population diversity should be given more weightage compared to selection pressure  
- (b) Selection pressure should be given more weightage compared to population diversity  
- (c) There should be a proper balance between population diversity and selection pressure  
- (d) Both population diversity and selection pressure have no role to play

Accepted Answers:
(c) There should be a proper balance between population diversity and selection pressure

No, the answer is incorrect.
Score: 0

Accepted Answers:
(c) There should be a proper balance between population diversity and selection pressure

8) Micro – GA is a 

- (a) Faster binary-coded GA developed using the principle of elitism

Accepted Answers:
(a) Faster binary-coded GA developed using the principle of elitism  

Score: 0
9) Genetic algorithm (GA) is a
   (a) Powerful tool for both local and global searches simultaneously
   (b) Powerful tool for global search
   (c) Powerful tool for local search
   (d) Weak tool for global search

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) Powerful tool for both local and global searches simultaneously

10) A Genetic algorithm is suitable for parallel computing as
    (a) It has the operators like reproduction, crossover, and mutation
    (b) It is a population-based approach
    (c) It does not require gradient information of the objective function
    (d) It is a robust optimization tool

No, the answer is incorrect.
Score: 0
Accepted Answers:
(b) It is a population-based approach