

B.Sc.(CS)

III YEAR/V SEMESTER EXAMINATION

Soft Computing

Subject Code- B070502T

[Time : 3:00 Hours]

[Max. Marks : 75]

I. Objective Question: Answer All Question

[1x15= 15]

1. What is the first step in Evolution algorithm
 - a) termination
 - b) selection
 - c) recombination
 - d) initialization
2. GA stands for
 - a) genetic algorithm
 - b) genetic assurance
 - c) genese algorithm
 - d) none of these
3. _____ defines logic function of two preposition
 - a) prepositions
 - b) linguistic hedges
 - c) truth tables
 - d) inference rules
4. MA sometimes called as
 - a) hybrid
 - b) integrated ea
 - c) both a and b
 - d) None of these
5. Genetic algorithm is a subset of _____
 - a) evolutionary algorithm
 - b) dynamic algorithm
 - c) both a and b
 - d) None of these
6. In artificial neural network interconnected processing elements are called
 - a) nodes or neurons
 - b) weights
 - c) axons
 - d) soma
7. How is fuzzy logic different from conventional control methods ?
 - a) if and then approach
 - b) for approach
 - c) while approach
 - d) do approach
8. Which of the following are evolutionary operators?
 - a) selection
 - b) crossover
 - c) mutation
 - d) all of the above
9. Which of the following are basic component neuron
 - a) dendrites
 - b) axon
 - c) nucleus
 - d) all of the above
10. The truth value of the fuzzy is
 - a) either 0 or 1
 - b) between 0.2 to 0.6
 - c) between 0 and 1
 - d) greater than 1

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B.Sc.(CS)

III YEAR/ V SEMESTER EXAMINATION

Analysis of Algorithm with data structure

Subject Code- B070501T

[Time : 3:00 Hours]

[Max. Marks : 75]

I. Objective Question: Answer All Question

[1x15= 15]

1. Which one of the following is not the type of the Queue?
 - a) Linear Queue
 - b) Circular Queue
 - c) Double ended Queue
 - d) Single ended Queue
2. What is the maximum number of children that a node can have in a binary tree?
 - a) 3
 - b) 1
 - c) 4
 - d) 2
3. How can we describe an array in the best possible way?
 - a) The Array shows a hierarchical structure.
 - b) Arrays are immutable
 - c) Container that stores the elements of similar types
 - d) The Array is not a data structure
4. Which of the following data structure is linear data structure?
 - a) Trees
 - b) Graphs
 - c) Arrays
 - d) None of these
5. Two main measures for the efficiency of an algorithm
 - a) Processor and memory
 - b) Complexity and capacity
 - c) Time and space
 - d) Data and science
6. Which of the following case does not exist in complexity theory
 - a) Best case
 - b) Worst case
 - c) Average case
 - d) Null case
7. Which of the following algorithms are used to find the shortest path from a source node to all other nodes in a weighted graph?
 - a) BFS
 - b) Dijkstra's Algorithm
 - c) Kruskal's Algorithm
 - d) Prim's Algorithm
8. What is the maximum number of swaps that can be performed in the Selection Sort algorithm?
 - a) n-1
 - b) n
 - c) 1
 - d) n - 2

[1]

2. What is the time complexity of the binary search algorithm?
 a) $O(n)$ b) $O(1)$ c) $O(\log 2n)$ d) $O(n^2)$
10. When a pop() operation is called on an empty queue, what is the condition called?
 a) Overflow b) Underflow c) Syntax Error d) Garbage Value
11. Which of the following data structure is used to perform recursion?
 a) Linked list b) Array c) Stack d) Queue
12. Which of the following is a Divide and conquer Algorithm.
 a) Bubble sort b) Selection sort c) Heap sort d) Merge sort
13. An algorithm is _____?
 a) A problem b) A procedure to solving a problem
 c) A real-life mathematical problem d) None of the problem
14. Identify the function of the stack that returns the top data element of the stack?
 a) pop() b) peek() c) push() d) findTop()
15. Which of the following principle does Queue use?
 a) LIFO principle b) FIFO principle c) Linear tree d) Ordered array

II. Long Question: Answer Any Three out of five [10x3=30]

1. What is Linked list and types of linked list.
2. Describe the applications of Stack in data structure.
3. Explain algorithm and its uses.
4. Brief note on Array and its types with program.
5. Elaborate Binary search in details.

III. Short Question: Answer any five out of seven [6x5=30]

1. Write the Advantages and disadvantages of Binary Search tree.
2. Define Multi dimensional array.
3. How to design an algorithm.
4. Write a short note on Greedy Algorithm.
5. What are the uses of Linked list.
6. Discuss the key operations of stack
7. Explain Queue in details.

[2]

- a) fuzzy computing, neu b) fuzzy network an
 c) neural science d) genetic science
12. A fuzzy rule can have.
 a) multiple parts of ante b) only single parts of
 c) multiple part of ant d) only single part of ante
13. Fuzzy logic deals with which of the following
 a) fuzzy set b) fuzzy algebra
 c) both a and b d) none of the above
14. How does blind search differ from optimization
 a) blind search represel b) blind search usua
 c) blind search cannot d) none of these
15. Recombination is applied on candidates
 a) one b) two c) more than two d) none of these
- II. Long Question: Answer Any Three out of five [10x3=30]**

1. Define softmax function in soft computing.
2. What are the learning rules in ANN and also define its types?
3. Explain propagation algorithm.
4. Brief note on neural networks.
5. Discuss about the architecture of artificial neural networks.

III. Short Question: Answer any five out of seven [6x5=30]

1. What is an artificial neural network?
2. Define activation function.
3. How does perception work?
4. Write a short on nerve structure.
5. Explain the uses of the softmax function.
6. What are genetic algorithms?
7. Discuss about some key characteristics of fuzzy logic in soft computing.