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B—463—2019

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2019

COMPUTER SCIENCE

Paper IV

(Analysis of Algorithm and Data Structure)

(MCQ & Theory)

(Thursday, 2-5-2019)

Time : 10.00 a.m. to 12.00 noon

Time— Two Hours

Maximum Marks—40

- N.B. :—*
- (i) All questions are compulsory.*
 - (ii) Figures to the right indicate full marks.*
 - (iii) Assume suitable data if necessary.*

(MCQ)

1. Solve all MCQs given below : 10
- (i) Accessing and processing each record exactly once is
 - (a) Sorting (b) Traversing
 - (c) Searching (d) None of these
 - (ii) The situation when in a linked list AYAIL = NULL is
 - (a) Underflow (b) Overflow
 - (c) Both (a) and (b) (d) None of these
 - (iii) Stack is.....type of data structure.
 - (a) FIFO (b) LIFO
 - (c) Both (a) and (b) (d) None of these
 - (iv) Binary types T and T' having same structure or shape are called
 - (a) Same (b) Similar
 - (c) Copies (d) None of these

P.T.O.

- (v) A graph G is said to beif there is a path between any two of its nodes.
- (a) Connected (b) Disconnected
(c) Disjoint (d) None of these
- (vi) Step involved in solving a problem is :
- (a) Data structure (b) Program
(c) Algorithm (d) None of these
- (vii) In thedata structure insertion from rear and deletion from front is possible.
- (a) Stack (b) Trees
(c) Graph (d) Queue
- (viii) Which of the following is non-linear data structure ?
- (a) Array (b) Stack
(c) Graph (d) Queue
- (ix) Which of the following sorting algorithms use divide and conquer technique ?
- (a) Quick sort (b) Bubble sort
(c) Both (a) and (b) (d) None of these
- (x) Let x be any real number. Then x line between two integers called.....and.....
- (a) Start, End (b) Top, Bottom
(c) Floor, Ceiling (d) None of these

(Theory)

2. (a) Explain divide and conquer technique. 5
(b) Explain data structure operations. 5

Or

- (a) Write an algorithm to delete a node with given item of information from linked list. 5
- (b) Explain POP operation on stack. 5
3. (a) Give memory representation of Queue. 5
- (b) Explain with suitable example concept of binary tree. 5
- Or*
- (a) Give the memory representation of graph. 5
- (b) Explain the terms Overflow and Underflow. 5
4. Explain insertion and deletion operation on queue with algorithm. 10
- Or*
- Write in detail mathematical notations and functions. 10