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W—404—2018

FACULTY OF COMPUTER SCIENCE
B.Sc. (Second Semester) EXAMINATION
NOVEMBER/DECEMBER, 2018
(CBCS Pattern)
COMPUTER SCIENCE

Paper IV

(Analysis of Algorithm and Data Structure)

(MCQ + Theory)

(Saturday, 8-12-2018)   **Time : 10.00 a.m. to 12.00 noon**

Time—2 Hours   *Maximum Marks—40*

N.B. :— (i) Attempt *All* questions.

(ii) Assume suitable data if necessary.

(iii) Figures to the right indicate full marks.

MCQ   10

1.   Select the *correct* alternative of the following :

(1)   .... is something that has certain attributes or properties which may be assigned values.

(A)   Entity   (B)   Group

(C)   Value   (D)   Item

(2)   To represent hierarchical relationship between elements .... data structure is used.

(A)   STACK   (B)   TREE

(C)   Queue   (D)   Graph

(3)   .... is a single elementry unit of information representing an attribute of an entity.

(A)   Data   (B)   File

(C)   Field   (D)   Record

P.T.O.

(4) Stack is a .... system.

    (A) LIFO   (B) FIFO

    (C) FILO   (D) LILO

(5) Queue is a .... system.

    (A) FIFO   (B) LILO

    (C) LIFO   (D) FILO

(6) Tree is .... data structure.

    (A) Linear   (B) Non-linear

    (C) Homogeneous   (D) Non-homogeneous

(7) A linked list is also known as ....

    (A) Two way list   (B) Multiway list

    (C) One way list   (D) None of these

(8) In linked list when AVAIL = NULL, then .... situation is occur.

    (A) Underflow   (B) Null

    (C) Both (A) and (B)   (D) Overflow

(9) Maximum number of nodes in a binary tree of depth K is ....

    (A) 2K – 1   (B) 2K + 1

    (C) 2K   (D) None of these

(10) Combining the records of two different file into a single file is known as ....

    (A) Traversing   (B) Merging

    (C) Sorting   (D) Searching

Theory

2. (a) Explain linked list with an example.   5

   (b) Explain divide and conquer approach.   5

Or

(c) Explain mathematical notations. 5

(d) Explain elementry data organization. 5

3. (a) Explain traversing a linked list. 5

(b) Explain memory representation of stack. 5

Or

(c) Write an algorithm for searching a linked list when list is unsorted. 5

(d) Explain POP operation. 5

4. (a) Explain memory representation of binary tree with an example. 10

Or

(b) Explain Warshall's algorithm. 10

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