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W—405—2018

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2018

(CGPA Pattern)

COMPUTER SCIENCE

Paper IV

(Data Structures)

(MCQ & Theory)

(Saturday, 08-12-2018)   **Time : 10.00 a.m. to 12.00 noon**

Time—2 Hours   *Maximum Marks—40*

N.B. :—   (*i*)   Attempt *All* questions.

         (*ii*)   Answer suitable data, if necessary.

MCQ

1.   Select the currect answer for the following :   10

     (*i*)   ....refers to single unit of values.

         (*a*)   A data item   (*b*)   Value

         (*c*)   Entity   (*d*)   All of these

     (*ii*)   Arranging data in some logical order is......................

         (*a*)   Merging   (*b*)   Sorting

         (*c*)   Fetching   (*d*)   Editing

     (*iii*)   Collection of homogenous data is called................................

         (*a*)   Array   (*b*)   Tree

         (*c*)   Stack   (*d*)   Graph

     (*iv*)   A queue is..........................list of elements.

         (*a*)   Binary   (*b*)   Digital

         (*c*)   Linear   (*d*)   None of these

                                                   P.T.O.

(*v*) A [K] is called.................................

 (*a*) Variable   (*b*) Pointer

 (*c*) Value   (*d*) Subscribed variable

(*vi*) ....term is used to remove an element from stack.

 (*a*) Del   (*b*) POP

 (*c*) PUSH   (*d*) Erase

(*vii*) A graph consists of...........................and Edges.

 (*a*) Data   (*b*) List

 (*c*) Nodes   (*d*) Values

(*viii*) A function calling itself is...............................

 (*a*) Recursion   (*b*) Execution

 (*c*) Procedure   (*d*) Call

(*ix*) Queue is also called...............................

 (*a*) First in last out   (*b*) Last in first out

 (*c*) Last in last out   (*d*) First in first out

(*x*) LB stands for...............................

 (*a*) List Bound   (*b*) Lower Bound

 (*c*) Lost Bound   (*d*) List Bound

Theory

2. (*a*) Explain elementary data organization.   5

  (*b*) Explain representation of array in memory.   5

Or

  (*c*) Explain quick sort technique.   5

  (*d*) Explain representation of linked list in memory.   5

3. (*a*) Explain array representation of stack. 5

   (*b*) Write an algorithm for binary search. 5

Or

   (*c*) Write an algorithm to insert element in a queue. 5

   (*d*) Explain representation of binary tree. 5

4. (*a*) Write an algorithm to delete a node from linked list. 5

   (*b*) Explain the concept of Recursion. 5

Or

   (*c*) Explain merge sort technique. 5

   (*d*) Explain PUSH and POP operations. 5