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J—4—2019

FACULTY OF SCIENCE
B.Sc. (Computer Science) (Second Year)
(Third Semester) EXAMINATION
MARCH/APRIL, 2019
(CBCS Pattern)
COMPUTER SCIENCE

(S-3.2)

(Data Structure)

(Friday, 12-4-2019)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours   *Maximum Marks—75*

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

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

1.   Attempt any *five* of the following :   15

   (*a*)   Describe the term 'Data Structure'.

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

   (*c*)   Explain the concept of 'Garbage Collection'.

   (*d*)   What is stack ? How is it differ from queue ?

   (*e*)   What is priority queue ? Explain.

   (*f*)   Explain the terms Header and Nodes.

   (*g*)   What is graph ? Explain.

2.   Attempt any *two* of the following :   10

   (*a*)   Describe basic terminology of data structure.

   (*b*)   Explain data structure operations.

   (*c*)   What is meant by complexity of algorithm ? Explain in detail.

3.   Attempt the following (any *two*) :   10

   (*a*)   Explain the procedure for traversing a linear array.

   (*b*)   Write an algorithm for inserting an element in an array.

   (*c*)   Explain in detail binary search method.

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4. Attempt the following (any *two*) : 10

   (*a*)   Explain the representation of linked list in memory.

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

   (*c*)   What is *two* way linked list ? Explain.

5. Attempt the following (any *two*) : 10

   (*a*)   Describe the sequential representation of stock.

   (*b*)   Describe the evolution of postfix expression.

   (*c*)   Write an algorithm to generate the fibonacci series.

6. Attempt the following (any *two*) : 10

   (*a*)   Describe linked representation of queue.

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

   (*c*)   What is D-queue ? Explain.

7. Attempt the following (any *two*) : 10

   (*a*)   Explain the post-order traversing of binary tree.

   (*b*)   Explain representation of graph.

   (*c*)   Explain operation of graph.