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BO—04—2016

FACULTY OF COMPUTER STUDIES

B.C.A. (Second Year) (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

(Revised Course)

COMPUTER APPLICATION

Paper S3.5

(Data Structures)

(Thursday, 17-11-2016) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—80

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Right figures indicate full marks.

(*iii*) Assume suitable data if necessary.

1. Write short note on the following : 20

   (*a*) Data structure

   (*b*) Memory representation linked list.

   (*c*) Deques

   (*d*) Garbage collection.

2. (*a*) Explain elementary data organization in detail. 8

   (*b*) What is array ? Explain linear array with example. 7

   Or

   (*c*) What is sorting ? Describe insertion sort with example. 8

   (*d*) Describe bubble sort in detail. 7

3. (*a*) What is linked list ? Write an algorithm for inserting element in linked list. 8

   (*b*) Describe traversing of binary tree in detail. 7

   Or

   (*c*) Explain traversing of linear array with example. 8

   (*d*) Describe basic terminology of stack with example. 7

P.T.O.

4. (*a*) Describe recursion with example in detail. 8

(*b*) Explain memory representation in queries. 7

Or

(*c*) Describe algorithm complexity and time-space trade off. 8

(*d*) Write an algorithm linear search also note on it. 7

5. Write notes on the following (any *three*) : 15

(*a*) Records

(*b*) Hedar nodes

(*c*) Types of binary tree

(*d*) Pointer.