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AW—5—2018

FACULTY OF COMPUTER STUDIES (SCIENCE)

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

MARCH/APRIL, 2018

(Revised Course)

COMPUTER STUDIES (COMPUTER APPLICATION)

Paper S3.5

(Data Structure)

(Saturday, 21-4-2018)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—80

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

(ii) Figures to the right indicate full marks.

1. Attempt the following : 20
 - (a) What is data structure ? Explain data structure operations in detail.
 - (b) Explain complexity and time space trade off.
 - (c) Explain priority queue in detail.
 - (d) What is stack and queue ? Explain in detail.
2. Solve the following :
 - (a) What is array ? Explain multidimensional array. 8
 - (b) Explain pointer array in detail. 7

Or

 - (c) Explain representation of linear array in memory. 8
 - (d) Write an algorithm for inserting an element into array. 7
3. Solve the following :
 - (a) Explain representation of linked list in memory. 8
 - (b) Write an algorithm for inserting an element into linked list. 7

P.T.O.

Or

- (c) Write an algorithm for deleting an element from linked list. 8
- (d) Explain traversing linear array with algorithm. 7
4. Solve the following :
- (a) Explain array representation of stacks. 8
- (b) Write an algorithm for inserting an element into stack. 7
- Or*
- (c) Explain arithmetic expressions. Evaluation of postfix expression. 8
- (d) Write an algorithm for inserting an element into queue. 7
5. Write short notes on (any *three*) : 15
- (a) Insertion sort
- (b) Binary search
- (c) Binary tree
- (d) Representation of queue in memory
- (e) Recursion.