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R—351—2017

FACULTY OF SCIENCE

B.Sc. (Second Semester) EXAMINATION

MAY/JUNE, 2017

COMPUTER SCIENCE

Paper IV

(Data Structure)

(MCQ+Theory)

(Thursday, 4-5-2017)

Time : 10.00 a.m. to 12.00 noon

Time— Two Hours

Maximum Marks—40

N.B. :— (i) Attempt all questions.

(ii) Assume suitable data if necessary

(iii) Figures to the right indicate full marks.

1. Choose the correct answer.

10

(i) To delete element of stack operation is used.

(a) Pop

(b) Push

(c) Remove

(d) Delete

(ii) Variable contains the address of element.

(a) Array

(b) Pointer

(c) Null

(d) Record

(iii) Finding the location of given element is called

(a) Sorting

(b) Traversing

(c) Searching

(d) Inserting

(iv) is *not* a type of linked list.

(a) Double

(b) Single

(c) Circular

(d) Hybrid

P.T.O.

- (v) Queue is also called as
- (a) FIFO (b) LIFO
(c) FILO (d) LILO
- (vi) The logical or mathematical model of a particular organization of data is called.....
- (a) Data model (b) Data structure
(c) Information model (d) Data organization
- (vii) A list must be sorted is a limitation ofsearch.
- a) Linear (b) Hybrid
(c) Binary (d) Radix
- (viii) is a single elementary unit of information representing attribute of an entity.
- (a) Data (b) File
(c) Record (d) Field
- (ix) Conquer and divide is a technique of sort.
- (a) Quick sort (b) Bubble sort
(c) Bucket sort (d) Radix sort
- (x) To represent a relationship between pairs of elements which is *not* necessarily hierarchical in nature,data structure is used.
- (a) Stack (b) Queue
(c) Tree (d) Graph

(Theory)

2. (a) Define data structure and its types. 5
(b) Explain memory representation of linear array. 5
- Or*
- (c) Explain memory representation of linked list. 5
(d) Write an algorithm to traverse a linked list. 5

3. (a) What is binary tree ? Explain with example. 5
(b) Device an algorithm for linear search. 5
- Or*
- (c) Write an algorithm to insert an element in queue. 5
(d) Explain representation of queue. 5
4. (a) Explain stack. Write an algorithm for PUSH and POP operation of stack. 10
- Or*
- (b) Write an algorithms for searching a linked list. When list is sorted and when list is unsorted. 10