Reg. No. :

Question Paper Code: 53080

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Biomedical Engineering

15UIT327 - OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Which of the following is not a jump statement in C++?

    (a) break   (b) goto   (c) exit   (d) switch

2. Choose the right option string* x, y;

    (a) x is a pointer to a string, y is a string
    (b) y is a pointer to a string, x is a string
    (c) both x and y are pointer to string types
    (d) none of these

3. A pointer variable which contains the location at the top element of the stack is called

    (a) Top   (b) last   (c) final   (d) end

4. The height of a BST is given as h. The maximum no. of nodes possible in the tree is

    (a) $2^{h-1} -1$ (b) $2^{h+1} -1$ (c) $2^h +1$ (d) $2^{h-1} +1$

5. _____ sorting algorithm is frequently used when n is small where n is total number of elements?

    (a) Heap   (b) Insertion   (c) Bubble   (d) Quick

PART - B (5 x 3 = 15 Marks)

6. What are tokens?

7. Explain pointer to a pointer with example.

8. Explain about heaps and its importance.

9. What is a Binary tree?

10. What are hash functions?

PART - C (5 x 16 = 80 Marks)

11. (a) (i) Explain briefly about function overloading with a suitable example. (8)

(ii) Explain Operator Overloading with example. (8)

Or

(b) Explain Constructor with suitable example. Discuss the types of Constructor with suitable example. (16)

12. (a) (i) What are the different forms of Inheritance? Explain Multiple Inheritance with an example program. (10)

(ii) Write short notes on Virtual Function and Pure Virtual Functions. (6)

Or

(b) Explain File Handling and Exception Handling with suitable example. (16)

13. (a) What is a stack ADT? Explain array implementation of stack and discuss about any three applications of stack. (16)

Or

(b) Explain the following operations in a circular queue using list implementation (i) Insert an element (ii) delete an element. (16)

14. (a) Explain AVL tree and its rotations in detail with suitable example. (16)

Or

(b) Explain in detail the Dijikstra's algorithm to solve the shortest path problem. (16)

15. (a) (i) Write a C++ program to perform binary search. (8)

(ii) Write a C++ program to do bubble sort. (8)

Or

(b) (i) Explain quick sort with an example. (8)

(ii) Explain Extendible hashing in detail. (8)

53080