**Reg. No. \_\_\_\_\_\_\_\_**

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/ Dec - 2016**

**Subject Title : C++ AND DATA STRUCTURES Time : 3 hours**

**Subject Code : 12EI212 Maximum Marks : 100**

#### **Answer ALL questions**

**PART – A (10 x 1 = 10 MARKS)**

1. Define Data structures.
2. State True of False. A Queue is a LIFO data structure.
3. Pivot element is selected in which sort?
4. True/False “Heap is a complete binary tree”.
5. List the types of constructors.
6. Sequence of characters with common name is called a \_\_\_\_\_\_\_\_\_\_\_.
7. Pointer variables store \_\_\_\_\_\_\_\_\_\_\_of another variable.
8. \_\_\_\_\_\_\_\_\_ Keyword is used for operator overloading.
9. Static function is defined by using the keyword \_\_\_\_\_\_\_\_\_.
10. \_\_\_\_\_\_\_\_\_\_\_member functions are not attached to any particular object.

**PART – B (5 x 3 = 15 MARKS)**

1. How is doubly linked list different from singly linked list?
2. Write the algorithm for linear search.
3. What is a class in C++ programming?
4. Write notes on constructor with example.
5. What is the significance of *this* pointer?

**PART – C (5 x 15 = 75 MARKS)**

1. Explain the different operations that can be performed on a queue data structure with suitable examples.

(OR)

1. Explain the binary search tree with an example.
2. Explain the process of building a heap with an example.

(OR)

1. Write the Binary search procedure and explain its function in detail.
2. Write a C++ program to copy the contents of one array into another in the reverse order.

(OR)

1. Explain the different built-in functions for strings in C++ language.
2. Explain different types of Inheritance with example.

(OR)

1. Write a C++ program to perform addition, subtraction and multiplication of complex numbers using operator overloading
2. What are friend and virtual functions? Explain with suitable examples.

(OR)

1. Explain the method of handling file streams in C++ programming language.