

B.Tech II Year I Semester (R13) Regular & Supplementary Examinations December 2015

**FILE STRUCTURES: AN OBJECT ORIENTED APPROACH**

(Information Technology)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- What is a constructor? Differentiate various types of constructors
  - What is the use of scope resolution operator in C++? Give example.
  - In what order destructors are called in inheritance?
  - What are the differences between overloading and overriding?
  - What is late binding? What are its advantages and disadvantages?
  - What is a generic function? What keyword is used to create a generic function?
  - What are the properties of magnetic tape?
  - What are the characteristics of secondary storage devices?
  - What is metadata? What is the name given to the place where metadata is stored in a file?
  - What are the problems with sequential access of files?

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 (a) In what order constructors and destructors are called? Illustrate with a C++ program.  
(b) Illustrate static storage class with the help of example.

**OR**

- 3 (a) Explain the dynamic memory management functions giving their syntax.  
(b) What is friend function? Give example.

**UNIT – II**

- 4 (a) Can we overload a constructor? If so give an example.  
(b) Write a C++ program to overload '+' operator to perform addition of complex numbers.

**OR**

- 5 (a) What is the difference between normal base class and virtual base class? Demonstrate with example.  
(b) What are default arguments? Explain with example.

**UNIT – III**

- 6 (a) Demonstrate the difference between compile time and runtime polymorphism with an example.  
(b) Define virtual function. Write a program for calling a virtual function through a base class reference.

**OR**

- 7 Write a C++ program to perform creation, insertion, traversal, and deletion operations on binary search trees.

**UNIT – IV**

- 8 (a) Describe the process of linking a logical file within a program to an actual physical file or device.  
(b) List and describe UNIX System calls for File I/O.

**OR**

- 9 (a) What is the need for storage as hierarchy? Explain.  
(b) Describe the buffering strategies for performance.

**UNIT – V**

- 10 (a) How the free space is identified in disks and made contiguous?  
(b) What are the methods for organizing records in files?

**OR**

- 11 (a) How classes are used to manipulate records in a file?  
(b) How the buffer class hierarchy is supported?

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