

Code No: NR220504

NR

Set No. 2

**II B.Tech II Semester Examinations, December 2010**  
**OBJECT ORIENTED PROGRAMMING**  
**Common to Information Technology, Electronics And Computer**  
**Engineering, Computer Science And Engineering, Computer Science And**  
**Systems Engineering**

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
 All Questions carry equal marks

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1. (a) Write a C program to find the sum of all even numbers upto 100  
 (b) Compare and contrast the usage and intent of *free()* function with *delete* operator. What is the purpose of delete operator? How do you use it? Illustrate in code. [8+8]
2. (a) What is the use of declaring the virtual destructor under multiple inheritance?  
 (b) Write a program in C++ to define multiple derived classes which are accessing the same base class data members through indirect base references using virtual base class. [8+8]
3. Explain Grady Booch approach for object oriented design with examples. [16]
4. Implement a square class. Each object of this class will represent a square, storing its side as float. Include a default constructor, access functions (to accept and to print), an area( ) function, and a perimeter( ) function. [16]
5. (a) Justify the need of virtual function in C++? What is runtime dispatching? Explain how C++ handles runtime dispatching.  
 (b) Write a program to demonstrate the compile time binding of the member functions of the class. The same message has to be displayed while accessing the derived class member functions from the array of pointers. [8+8]
6. (a) Write a class template to represent a generic vector. Include member functions to perform the following tasks:
  - i. to create the vector
  - ii. to modify the value of a given element
  - iii. to multiply by a scalar value
  - iv. to display the vector in the form (10,20,30,.....)
 (b) Explain the differences between Templates and Macros? [10+6]
7. (a) Write a program that allows the input of names and ages from the keyboard and stores them, in characters, in the file PEOPLE.DAT. After the input is finished, the program should printout what is in the file as well as the average age?  
 (b) Answer the following:

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- i. Why is `ios ::` necessary in the following statement?  
`cout << setiosflags(ios :: showbase);`
  - ii. How can the following statement work for testing the end of file, if `infile` is an `ifstream` object?  
`while(infile);` [6+10]
8. Implement using C++ single linked list with `create( )`, to create the list `search( )` to search an element in the list and `delete( )` to delete the specified element. [16]

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FIRSTRANKER

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Set No. 4

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1. Implement a square class. Each object of this class will represent a square, storing its side as float. Include a default constructor, access functions (to accept and to print), an area( ) function, and a perimeter( ) function. [16]
2. (a) Justify the need of virtual function in C++? What is runtime dispatching? Explain how C++ handles runtime dispatching.  
 (b) Write a program to demonstrate the compile time binding of the member functions of the class. The same message has to be displayed while accessing the derived class member functions from the array of pointers. [8+8]
3. Implement using C++ single linked list with create( ), to create the list search( ) to search an element in the list and delete( ) to delete the specified element. [16]
4. (a) Write a C program to find the sum of all even numbers upto 100  
 (b) Compare and contrast the usage and intent of *free()* function with *delete* operator. What is the purpose of delete operator? How do you use it? Illustrate in code. [8+8]
5. Explain Grady Booch approach for object oriented design with examples. [16]
6. (a) What is the use of declaring the virtual destructor under multiple inheritance?  
 (b) Write a program in C++ to define multiple derived classes which are accessing the same base class data members through indirect base references using virtual base class. [8+8]
7. (a) Write a class template to represent a generic vector. Include member functions to perform the following tasks:
  - i. to create the vector
  - ii. to modify the value of a given element
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  - iv. to display the vector in the form (10,20,30,.....)
 (b) Explain the differences between Templates and Macros? [10+6]
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(b) Answer the following:

i. Why is `ios ::` necessary in the following statement?

```
cout << setiosflags(ios :: showbase);
```

ii. How can the following statement work for testing the end of file, if `infile` is an `ifstream` object?

```
while(infile);
```

[6+10]

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1. (a) Write a program that allows the input of names and ages from the keyboard and stores them, in characters, in the file PEOPLE.DAT. After the input is finished, the program should printout what is in the file as well as the average age?  
 (b) Answer the following:
  - i. Why is `ios ::` necessary in the following statement?  
`cout << setiosflags(ios :: showbase);`
  - ii. How can the following statement work for testing the end of file, if `infile` is an `ifstream` object?  
`while(infile);` [6+10]
2. (a) What is the use of declaring the virtual destructor under multiple inheritance?  
 (b) Write a program in C++ to define multiple derived classes which are accessing the same base class data members through indirect base references using virtual base class. [8+8]
3. Implement a square class. Each object of this class will represent a square, storing its side as float. Include a default constructor, access functions (to accept and to print), an `area( )` function, and a `perimeter( )` function. [16]
4. (a) Write a class template to represent a generic vector. Include member functions to perform the following tasks:
  - i. to create the vector
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  - iii. to multiply by a scalar value
  - iv. to display the vector in the form (10,20,30,.....)
 (b) Explain the differences between Templates and Macros? [10+6]
5. (a) Write a C program to find the sum of all even numbers upto 100  
 (b) Compare and contrast the usage and intent of `free()` function with `delete` operator. What is the purpose of delete operator? How do you use it? Illustrate in code. [8+8]
6. Explain Grady Booch approach for object oriented design with examples. [16]

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7. (a) Justify the need of virtual function in C++? What is runtime dispatching? Explain how C++ handles runtime dispatching.
- (b) Write a program to demonstrate the compile time binding of the member functions of the class. The same message has to be displayed while accessing the derived class member functions from the array of pointers. [8+8]
8. Implement using C++ single linked list with create( ), to create the list search( ) to search an element in the list and delete( ) to delete the specified element. [16]

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  - i. to create the vector
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4. Explain Grady Booch approach for object oriented design with examples. [16]
5. (a) Write a program that allows the input of names and ages from the keyboard and stores them, in characters, in the file PEOPLE.DAT. After the input is finished, the program should printout what is in the file as well as the average age?
 (b) Answer the following:
  - i. Why is `ios ::` necessary in the following statement?  
`cout << setiosflags(ios :: showbase);`
  - ii. How can the following statement work for testing the end of file, if `in.file` is an `ifstream` object?  
`while(in.file);` [6+10]
6. (a) Justify the need of virtual function in C++? What is runtime dispatching? Explain how C++ handles runtime dispatching.
 (b) Write a program to demonstrate the compile time binding of the member functions of the class. The same message has to be displayed while accessing the derived class member functions from the array of pointers. [8+8]
7. (a) What is the use of declaring the virtual destructor under multiple inheritance?

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- (b) Write a program in C++ to define multiple derived classes which are accessing the same base class data members through indirect base references using virtual base class. [8+8]
8. (a) Write a C program to find the sum of all even numbers upto 100
- (b) Compare and contrast the usage and intent of *free()* function with *delete* operator. What is the purpose of delete operator? How do you use it? Illustrate in code. [8+8]

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