

**B.E DEGREE EXAMINATIONS: APRIL/MAY 2014**

(Regulation 2009)

Sixth Semester

**ELECTRONICS AND INSTRUMENTATION ENGINEERING**

CSE202: Object Oriented Programming & C++

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. When a language has the capability to produce new data types, it is said to be \_\_\_\_\_
  - a) reprehensible
  - b) encapsulated
  - c) overloaded
  - d) extensible
2. Inheritance is used to
  - a) Reduce Code
  - b) Increase security
  - c) Increase code
  - d) Shows various forms
3. The constructor is used
  - a) To do operation
  - b) To do multiple operation
  - c) To initialize
  - d) To automatically initializing variables
4. The getch() library function used to \_\_\_\_\_
  - a) returns a character when any key is pressed.
  - b) returns a character when Enter is pressed.
  - c) displays a character on the screen when any key is pressed.
  - d) does not display a character on the screen.
5. A structure brings together a group of \_\_\_\_\_
  - a) items of the same data type.
  - b) related data items.
  - c) integers with user-defined names.
  - d) variables.
6. The dot operator (or class member access operator) connects the following two entities (reading from left to right):
  - a) A class member and a class object
  - b) A class object and a class
  - c) A class and a member of that class
  - d) A class object and a member of that class
7. To convert from a basic type to a user-defined class, you would most likely use \_\_\_\_\_
  - a) a built-in conversion operator.
  - b) one-argument constructor.
  - c) an overloaded = operator.
  - d) a conversion operator that's a member of the class.

8. A class hierarchy is \_\_\_\_\_
  - a) shows the same relationships as an organization chart.
  - b) describes "has a" relationships.
  - c) c. describes "is a kind of" relationships.
  - d) None of the above.
9. An abstract class is useful when \_\_\_\_\_
  - a) no classes should be derived from it.
  - b) there are multiple paths from one derived class to another.
  - c) no objects should be instantiated from it.
  - d) you want to defer the declaration of the class.
10. Additional information sent when an exception is thrown may be placed in \_\_\_\_\_
  - a) the throw keyword.
  - b) the function that caused the error.
  - c) the catch block.
  - d) an object of the exception class.

**PART B (10 x 2 = 20 Marks)**

11. How are data and functions organized in an object oriented programming?
12. Differentiate between c and c++.
13. Write a switch statement that prints Yes if a variable ch is 'y', prints No if ch is 'n', and prints Unknown response otherwise.
14. What functions can access a global variable that appears in the same file?
15. Demonstrate destructor with an example.
16. Compare array and structure.
17. Why it is necessary to overload an operator?
18. What are different forms of inheritance?
19. List the applications of "this" pointer?
20. Why are the words such as cin and cout not considered as keywords?

**PART C (5 x 14 = 70 Marks)**

21. a) i) Differentiate dynamic binding and message passing. (4)  
ii) Describe how data are shared by functions in procedure-oriented programs and object oriented programming. (10)
- (OR)**
- b) i) Write a C++ program to read three numbers from keyboard and display the larger value on screen. (4)  
ii) List the benefits of OOP and how does main() function in c++ differs from main() in c. (10)

22. a) i) Brief the importance of scope resolution operator with an example. (6)  
 ii) What is reference variable. Differentiate between call by value and call by reference with c++ program. (8)

(OR)

- b) i) What are the advantages of using new operator as compared to the function of malloc()? Give example. (6)  
 ii) What do you mean by overloading of a function? When do we use this concept? Write a C++ program to manage contacts in a mobile phone using function overloading. (8)

23. a) i) Create a class called employee that contains a name (an object of class string) and an employee number (type long). Include a member function called getdata() to get data from the user for insertion into the object, and another function called putdata() to display the data. Assume the name has no embedded blanks. Write a main() program to exercise this class. It should create an array of type employee, and then invite the user to input data for up to 100 employees. Finally, it should print out the data for all the employees. (7)

- ii) Brief about C++ string classes in detail. (7)

(OR)

- b) i) Explain constructor and its types with an example program. (7)  
 ii) Imagine a tollbooth at a bridge. Cars passing by the booth are expected to pay a 50 cent toll. Mostly they do, but sometimes a car goes by without paying. The tollbooth keeps track of the number of cars that have gone by, and of the total amount of money collected. Model this tollbooth with a class called tollBooth. The two data items are a type unsigned int to hold the total number of cars, and a type double to hold the total amount of money collected. A constructor initializes both of these to 0. A member function called payingCar() increments the car total and adds 0.50 to the cash total. Another function, called opayCar(), increments the car total but adds nothing to the cash total. Finally, a member function called display() displays the two totals. Make appropriate member functions const. Include a program to test this class. Use operator and function overloading. (7)

24. a) i) Define operator overloading. Write a C++ program for Overloading Binary

Operators with distance object. (Use meter & centimeter)

(OR)

- b) i) Brief about Accessing Base Class Members. (7)  
 ii) Imagine a publishing company that markets both book and audiocassette versions of its works. Create a class publication that stores the title (a string) and price (type float) of a publication. From this class derive two classes: book, which adds a page count (type int), and tape, which adds a playing time in minutes (type float). Each of these three classes should have a getdata() function to get its data from the user at the keyboard, and a putdata() function to display its data. (7)

Write a main() program to test the book and tape classes by creating instances of them, asking the user to fill in data with getdata(), and then displaying the data with putdata().

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25. a) i) Show pure virtual function with an example. (7)  
 ii) Explain about Disk File I/O with Streams. (7)

(OR)

- b) i) Describe about Assignment and Copy Initialization (4)  
 ii) Give the importance of template class and Write a C++ program to perform stack operations using template class. (10)

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