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Question Paper Code : 21311

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Fifth Semester

Electrical and Electronics Engineering

CS 2311/CS 59/10133 EE 604 — OBJECT ORIENTED PROGRAMMING

(Common to Electronics and Instrumentation Engineering and Instrumentation and Control Engineering)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define attribute.
2. What is compile time polymorphism in OOPS?
3. Compare overloading and overriding.
4. What is the size of a class having one or more virtual functions?
5. What are the advantages of using exception handling?
6. What is STL, standard template library?
7. Is JVM's platform independent? Justify.
8. How do we allocate an array dynamically in Java?
9. What is the difference between superclass and subclass?
10. Which class and interface in java is used to create thread and which is the most advantageous method?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Define polymorphism. Describe the type of polymorphism with example. (8)
- (ii) Explain the order in which constructors are called when an object of a derived class is created. (8)

Or

- (b) Write a complete C++ program to do the following : (16)
- (i) 'Student' is a base class, having two data members : entryno and name; entryno is integer and name of 20 characters long. The value of entryno is 1 for Science student and 2 for Arts student, otherwise it is an error.
- (ii) 'Science' and 'Arts' are two derived classes, having respectively data items marks for Physics, Chemistry, Mathematics and marks for English, History, Economics.
- (iii) Read appropriate data from the screen for 3 science and 2 arts students.
- (iv) Display entryno, name, marks for science students first and then for arts students.
12. (a) (i) Write a C++ program using operator overloading to add two time values in the format HH:MM:SS to the resulting time along with rounding off when 24 hours is reached. A time class is created and operator + is overloaded to add the two time class objects. (10)
- (ii) Explain in detail about friend functions in C++ with example. (6)

Or

- (b) (i) What is multiple inheritance? Discuss the syntax and rules of multiple inheritance in C++. How can you pass parameters to the constructors of base classes in multiple inheritance? Explain with suitable example. (8)
- (ii) What is the difference between a virtual function and a pure virtual function? Give example of each. (8)
13. (a) (i) What are the various ways of handling exceptions? When do we use multi catch handlers? Explain with an example. (8)
- (ii) Draw the I/O stream hierarchy in C++ and explain it clearly. (8)

Or

- (b) (i) Write a C++ program to convert the given string from lowercase to uppercase using files. (8)
- (ii) Explain the following functions (with example) for manipulating file pointers: seekg(), seekp(), tellg(), tellp(). (8)

14. (a) Write a JAVA program using arrays to do the following : (16)
- (i) to copy one array content to another array
 - (ii) to arrange the numbers in ascending order
 - (iii) find the maximum of an array.

Or

- (b) (i) Write a simple Java program to find a given string in a string array. (8)
- (ii) Write a Java program to split a string into multiple Java String objects. (8)
15. (a) Create class box and box3d. box3d is an extended class of box. The above two classes has to fullfill the following requirement. (16)
- Include constructor
 - Set value of length, breadth, height
 - Find out area and volume.

Or

- (b) What is Exception handling in Java? Why is it used? With example, explain how to handle the exception with overloaded methods. (16)
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