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BE Degree Examination November 2015

Third Semester

Common to ECE, EEE and EIE Branches

14CST35 – OBJECT ORIENTED PROGRAMMING

(Regulations 2014)

Common to

Time: Three hours

Maximum: 100 marks

Answer all Questions

Part – A ($10 \times 2 = 20$ marks)

1. Name any four object oriented languages.
2. What is function overloading? Highlight the most important benefit of function overloading.
3. "Member functions can be nested". Justify this statement.
4. Relate the objects in the real world with the objects in an object oriented program. How are the objects created during execution of a program?
5. Distinguish between constructors and destructors.
6. List the operators which cannot be overloaded.
7. When do we make a class virtual?
8. How are abstract classes used during inheritance?
9. Why is the file mode parameter `ios::app` used for?
10. List any two C++ stream classes along with their usages.

Part – B ($5 \times 13 = 65$ marks)

11. a. i) Outline the benefits of object oriented programming. (5)
ii) Write a C++ program to illustrate function overloading to determine the volumes of cube, cylinder and cuboid. (8)
- (OR)
- b. i) Summarize the concepts of call by reference and return by reference with a C++ program. (7)
ii) List the operators in C++ programming language. Explain any two operators in detail. (6)

12. a. i) Illustrate the static data members with a C++ program. (7)
ii) Explain how an object can be used as function arguments using a suitable C++ program. (6)

(OR)

- b. How do you define and use array of objects for a student class through a C++ program? The program should read the details of 25 students, Calculate their total and average marks and finally display the entire details of the class of 25 students. (13)
13. a. Develop a C++ program to illustrate the concept of overloading of binary operator using friend function. (13)
- (OR)
- b. Write and explain a C++ program for manipulation of string using operator overloading. (13)
14. a. i) Apply hierarchical inheritance for bank account in a banking system. Draw suitable hierarchy tree for the classes in this banking system. (6)
ii) Evaluate the use of 'this' pointer with a C++ program for an employee class. (7)

(OR)

- b. i) Write a C++ program and explain the importance of pure virtual function with a simple logic of your choice. (6)
ii) Explain with a C++ program how to create space for array of objects using pointers. (7)
15. a. Name the formatted console I/O operators and explain with examples. (13)
- (OR)
- b. Write a C++ program to work with C++ files concept. Create a "Student file" having student name, roll no, marks, total and average marks for each student. Copy the contents of this student file to another file called "second file". (13)

Part – C (1 × 15 = 15 marks)

16. a. Write a C++ program to perform operations on complex numbers by overloading '+' and '-' arithmetic operators. (15)
- (OR)
- b. Write a C++ program to create a "Person" baseclass. Then include the necessary member data and member functions. Create two derived classes, namely "Employee" and "Employer". With these three types of classes, write C++ program to perform "Payroll Processing" and display the salaries of all the employees. The two types of employees are "Temporary-Employees" and "Permanent-Employers". Also, explain the inheritance involved in this problem with a diagram. (15)