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Question Paper Code: 51834

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Third Semester

Information Technology

15UIT304 - OBJECT ORIENTED PROGRAMMING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. If an expression contains one int, one float and one double data items then the target conversion type will be
(a) int (b) double (c) float (d) long double
2. Which of the following is a characteristics of a class?
(a) a class can have only one object (b) a class is template to create objects
(c) a class contains only data (d) a class contains only methods
3. The ability of an object to exhibit different behaviors in response to the same message is called
(a) encapsulation (b) synchronization
(c) polymorphism (d) abstraction
4. The classes with pure virtual functions are called _____ classes
(a) virtual (b) abstract (c) absolute (d) imaginary

5. Which one of the following statement is correct?
- (a) “cerr” is a predefined stream
 - (b) “cexit” is used for directing output
 - (c) The I/O streams library handles only standard input and output
 - (d) There are four types of predefined iostreams

PART - B (5 x 3 = 15 Marks)

6. Write down the merits of object oriented programming.
7. Define parameterized constructors. Give an example.
8. Distinguish between overloaded function and function templates.
9. Write some of the basic rules for virtual functions.
10. List and write the use of manipulators in C++? Give examples.

PART - C (5 x 16 = 80 Marks)

11. (a) (i) Discuss the different ways of passing arguments to the function. (8)
- (ii) Formulate a C++ program to sort a list of integers using an array. (8)

Or

- (b) Explain the various types of operators supported by C++ and specify the precedence and associativity of each operator. (16)
12. (a) (i) What are friend functions? Explain their characteristics with a suitable example. (8)

- (ii) An electricity board charges the following rates to domestic users

For the first 100 units – Rs. 3 per unit

Beyond 300 units – Rs. 5 per unit

If the total cost is more than Rs. 500 then an additional surcharge of 15% is added on the difference. Define class electricity in which the function bill computes the cost. (8)

Or

- (b) (i) When do you call copy constructors? Explain using an example. (6)

(ii) How the objects are used as function argument? With a simple program explain the concept. (10)

13.(a) What are different types of inheritance supported by C++? Explain each of it using an example. (16)

Or

(b) Write a C++ program to implement time class that has separate data members for hours, minutes and seconds. Overload + operator to add two times object and ++ operator to increment the time by one second. (16)

14. (a) (i) What is run time polymorphism? How it is achieved? Explain with an example? (10)

(ii) What are virtual base classes? How they are different from virtual functions? (6)

Or

(b) (i) What is the need of templates? Give a note on function templates. (6)

(ii) Formulate a C++ program to add, subtract, multiply and divide two numbers using class template. (10)

15. (a) Create an employee file with employee details, employee number, employee name and basic pay. Find DA, HRA, GROSS PAY, IT, PF and NET PAY using the following details, save it in a file and generate the pay bill for individual employee.

DA = 65% of basic pay

HRA=10% of basic pay

IT = 15% of basic pay

P.F. = 12.5% of basic pay

GROSS PAY = basic pay + DA + HRA and

NET PAY = GROSS PAY – IT – PF. (16)

Or

(b) (i) Write notes on formatted and unformatted console I/O operations. (8)

(ii) Explain how errors can be handled in C++. (8)

