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10EC665

Sixth Semester B.E. Degree Examination, Dec.2017/Jan.2018
Programming in C++

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. What are preprocessor directives? List the different types and explain their use. **(06 Marks)**

b. Explain dynamic memory allocation in C++. What is memory leak? **(06 Marks)**

c. With the help of a general class structure, explain in detail object based design. **(08 Marks)**

2 a. What is variable? What are the accepted conventions of naming a variable? **(05 Marks)**

b. Explain the difference between the following literal constants :
i) 12.345L ii) 024 iii) L "a" iv) 1024UL v) 2.56F. **(05 Marks)**

c. Explain the following terms with example :
i) pointer arithmetic
ii) class scope operator
iii) const qualifies
iv) reference variables
v) Enum. **(10 Marks)**

3 a. Differentiate implicit and explicit type conversion. Give atleast three general program situations when implicit type conversions happen. **(08 Marks)**

b. Write a program to accept ten numbers from the user and print the sum and average of them. **(08 Marks)**

c. Differentiate between the while and do-while looping constructs. **(04 Marks)**

4 a. What are functions? Explain the general structure of functions in C++. **(08 Marks)**

b. Explain different ways of argument passing in a function with the help of swap( ). (function to swap two numbers). **(12 Marks)**

PART – B

5 a. What are exceptions? What is the mechanism given by C++ to handle them? **(05 Marks)**

b. Write a C++ program to handle :
i) Divide by zero
ii) Stack full exception. **(10 Marks)**

c. Explain the flow of the program on occurrence of an exception. **(05 Marks)**

6 a. Using the general structure of class, explain how information hiding is implemented in C++. **(08 Marks)**

b. Explain the following with examples :
i) Class constructor
ii) Class destructor
iii) Default constructor. **(09 Marks)**

c. Explain the following definition class Accounts{ }, Account Name [10]. **(03 Marks)**

7 a. Explain how ++ and – – operators can be overloaded using a sample class. **(12 Marks)**

b. Differentiate the following definitions for class student :

i) Student *S = new student (24) ;

ii) Student *S = new student (10); **(08 Marks)**

8 a. Define class inheritance. How are Public, Private and Protected inheritance implemented. Give an example. **(12 Marks)**

b. Class vehicle {···};
Class two wheeler : public vehicle {···};
Class four wheeler : public vehicle , public two wheeler { };
Explain the scope of inheritance in the above structure. **(08 Marks)**

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