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BANGALORE - 560 03

10TE661

Sixth Semester B.E. Degree Examination, June/July 2018
Programming in C++

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain dynamic memory allocation with the help of new and delete operator. Give the primary differences between static and dynamic memory allocation. (10 Marks)
- b. Explain exception handling mechanism with the help of a program as an example. (06 Marks)
- c. Explain the difference between the 4 objects defined below :
 i) `int ival = 2048 ;`
 ii) `int *pi = &ival;`
 iii) `int *pi2 = new int(1048);`
 iv) `int *pi3 = new int [1048] ;` (04 Marks)
- 2 a. What is a variable? What are the rules to name a variable? (04 Marks)
- b. Explain the significance of reference type variables and enumerated type variables with examples. (06 Marks)
- c. With examples, explain what sorts of operations that we expect from a string class. Write a program in C++ to find the length of the string using the string type. (10 Marks)
- 3 a. Explain with syntax, the components of the switch statement. Write a program in C++ to keep a count of individual vowels and count of consonants in a random segment of text. (12 Marks)
- b. Discuss the following with examples :
 i) The for statement and the while statement
 ii) The break statement and the continue statement. (08 Marks)
- 4 a. Explain function prototype, function, function call, function parameters and function return with a single C++ program. (12 Marks)
- b. What are inline functions? Write an inline function to find the larger of the two integers. (08 Marks)

PART – B

- 5 a. What is an exception? With the help of example, explain how the try and catch block works. (05 Marks)
- b. Discuss about the following :
 i) Exception specification
 ii) Exceptions and design issues. (05 Marks)
- c. Write a C++ program to include top and array of integers and include member functions : constructor, pop, push, full, empty and display. Include exceptions, when popping from empty stack or pushing into a full stack. (10 Marks)

- 6 a. Differentiate between class definition and class declaration with examples. (04 Marks)
b. What are class and objects? How the data members are declared and accessed? Give examples. (06 Marks)
c. Discuss the following in detail :
i) Constructor Member Function
ii) Destructor Member Function. (10 Marks)
- 7 a. List the operators of C++ which cannot be overloaded. Write a C++ program to concatenate 2 strings by overloading operator +.
S1 = VTU S2 = BELGAUM S3 = S1 + S2. (10 Marks)
b. Explain the following with examples :
i) Overloaded operators ++ and --
ii) Overloaded operators new and delete. (10 Marks)
- 8 a. What is a derived class? Explain about public, private and protected inheritance with examples. Explain how to make a private member inheritable. (12 Marks)
b. Discuss about the following in detail with examples :
i) Class scope under inheritance
ii) Object composition. (08 Marks)