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10EC665

**Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019**  
**Programming in C++**

Time: 3 hrs.

Max. Marks:100

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

**PART – A**

- 1 a. What is object oriented programming? Explain any four basic concepts of OOPS. (10 Marks)
- b. What is data type? Explain the different data types supported in C++. (10 Marks)
- 2 a. Explain with an example the relationship between arrays and pointer types. (06 Marks)
- b. What is meant by enumerated data type? Explain with an example. (04 Marks)
- c. With a C++ program explain the usage of 'new' and 'delete' operators for dynamically allocating memory. (10 Marks)
- 3 a. Describe with examples the following control structures in C++:  
(i) Do while loop (ii) if else (iii) for loop. (10 Marks)
- b. Evaluate the expressions: (i)  $5 + 8 < 14 - 2 \parallel 16 > 3$  (ii)  $6 + 7 \geq 12 \ \& \ \&(3 + 4) > 2 * 4$ . (04 Marks)
- c. Write a C++ program to accept a character and categorize it as an alphabet or a digit or a special symbol using 'switch' case statement. (06 Marks)
- 4 a. Explain with suitable examples: (i) Pass by value and (ii) pass by pointer, mechanisms of passing arguments in functions. (10 Marks)
- b. Write a C++ program to find the factorial of numbers using recursive function. (06 Marks)
- c. With an code snippet illustrate the application of in-line function in C++ language. (04 Marks)

**PART – B**

- 5 a. Explain with a simple C++ program the try\_catch throw mechanism of handling exceptions. (10 Marks)
- b. Discuss the design issues associated with the use of exception handling in C++. (10 Marks)
- 6 a. Define constructor and types for a given class, with an example C++ program. (10 Marks)
- b. Write a C++ program to perform stack operations like push and pop. (10 Marks)
- 7 a. Define operator overloading. Write a C++ program to concatenate two strings by overloading operator +. String  $S_1 = VTU$ ,  $S_2 = BELAGAVI$ . Store the result in string  $S_3$ . (10 Marks)
- b. Write a C++ program to overload operators. (10 Marks)
- 8 a. Explain single and multi-level inheritance with example programs. (10 Marks)
- b. Explain the difference between:
  - (i) Protected inheritance. (10 Marks)
  - (ii) Private inheritance. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg,  $42+8 = 50$ , will be treated as malpractice.