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Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Programming in C++

Time: 3 hrs.

Max. Marks: 100

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

PART – A

1. What is a preprocessor directive? What are the different types of preprocessor directives used in C++? Explain each with an example. (10 Marks)
- b. Explain the following terms, with suitable examples :
i) classes ii) inheritance iii) polymorphism. (06 Marks)
- c. What is enumerated data type? Explain in brief. (04 Marks)
2. a. Define pointer? Explain the advantages of a pointer. Indicate the difference between address of operator and indirection operator. (10 Marks)
- b. What is a variable? What are the rules to name a variable? (05 Marks)
- c. Write a C++ program to find the length of the string using the string type. (05 Marks)
3. a. Explain bitwise and bitset operators giving appropriate examples. (08 Marks)
- b. Explain with syntax the components of switch statements. Write a program in C++ to count the number of vowels in a given string. (12 Marks)
4. a. Explain the two methods of passing parameters to a function with swap() as example for exchange of two values (numbers). (10 Marks)
- b. Write a C++ program to find the factorial of a number, using recursive function. (10 Marks)

PART – B

5. a. What is an exception? With the help of example explain two the try block and catch block works. (10 Marks)
- b. Write a C++ program to illustrate the process of catching uncaught exceptions thrown in a try block. (10 Marks)
6. a. Explain parametrical constructors. Develop a C++ program to implement parameterised constructor. (10 Marks)
- b. Write a C++ program to calculate the surface area and volume of a sphere using equations $4\pi r^2$ and $\frac{4}{3}\pi r^3$ where 'r' is the radius of the sphere using class 'sphere' and the object 'mysphere' and member functions as vol() and S-area(). (10 Marks)
7. a. What is operator overloading? Write a C++ program to add 2 complex numbers by over loading the operator '+'. (10 Marks)
- b. Explain the following with example :
i) Overloaded operators ++ and --
ii) Overloaded operators new and delete. (10 Marks)
8. a. Explain what is meant by a class relationship, base class, derived class and protected members, with the help of examples. (10 Marks)
- b. Explain briefly : i) Class destructor ii) Operator precedence. (10 Marks)

