USN | | | | | | | | | | **10EC665**

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 a. 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 caching are 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 are a and volume of a sphere using equations $4\pi r^2$ and $\frac{4}{3}\pi^3$ 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 relationstrip, 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)**

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