

2020**B.C.A.****[HONOURS]****(Object Oriented Programming through C++)****Paper : BCA-206**

Full Marks : 80

Time : 4 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*Answer **Q. No.1** and any **four** from the rest.

1. Answer any **eight** questions: 2×8=16
- a) What is base class?
 - b) What is IS-A and HAS-A relationship?
 - c) What is static data member?
 - d) Which operators cannot be overloaded?
 - e) What is late binding?
 - f) What is the purpose of file mode 'no-create'? Explain with example.
 - g) Define try block.
 - h) What are the differences between struct in C and class in C++?

- i) What are the demerits of using friend functions?
 - j) What is this pointer?
 - k) What is reference variable?
 - l) What is the meaning of ios::cur?
2. a) What is operator overloading? Explain the importance of operator overloading.
- b) Write a C++ program to overload = = operation on string class.
- c) Where friend function is advantageous than operators function in case of operator overloading? 4+10+2=16
3. a) Write a simple program to implement single inheritance.
- b) Explain with example call by reference using reference variable in C++.
- c) Write important characteristics of static member function. 8+4+4=16
4. a) What is the benefit of Inheritance? What does class inheritance mean?
- b) Discuss about different access specifier in C++.

[Turn over]

c) What do you mean by dynamic initialization of objects? $(4+2)+6+4=16$

5. a) Define constructor.
b) Differentiate default and parameterized constructor.
c) What is destructor?
d) Write a program to overload constructors.

$$2+4+2+8$$

6. a) Write a template function for bubble sort in C++ to sort a list of number of any type.
b) Write a C++ program to demonstrate try-catch block.
c) What is inline function? What are the situations where inline expansion not work?

$$6+6+4=16$$

7. Write short notes on following (any **four**) :

$$4 \times 4 = 16$$

- a) Virtual function
b) Types of inheritance
c) Stream class
d) Class template
e) Dynamic Polymorphism
f) Reference variable