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BCA/3rd Sem/OOPs/CC-5T/23

2023

BCA 3rd Semester (CBCS) Examination

OOPs using C++

PAPER — CC-5T

Full Marks : 50

Time : 2 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.*

Illustrate the answers wherever necessary.

Answer from **all** the Groups as directed.

GROUP—A

1. Answer **any five** questions : $2 \times 5 = 10$

- (a) Define polymorphism in C++. Explain its types.
- (b) Differentiate between pass by value and pass by reference in functions.

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(Turn Over)



(2)

- (c) Explain the purpose of the 'this' pointer in C++ with an example.
- (d) What is the difference between pre-increment (++) and post-increment (i++) operator?
- (e) Describe function overloading in C++ with an example.
- (f) Differentiate between a class and an object in C++.
- (g) Explain the difference between dynamic memory allocation and static memory allocation.
- (h) What is the role of the 'virtual' keyword in C++ inheritance?

GROUP--B

2. Answer any four questions : 5×4=20

- (a) Implement a stack using arrays in C++ and demonstrate its functionality.
- (b) Discuss the use of friend functions in C++ with an example.

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(Continued)



(3)

- (c) Explain operator overloading in C++ with example.
- (d) Write a program in C++ to illustrate multiple inheritance.
- (e) Discuss exception handling in C++ with example.
- (f) How does the 'const' keyword affect member functions in C++ classes?

GROUP--C

3. Answer any two questions : 10×2=20

- (a) Explain inheritance in C++ with an example. Discuss how it facilitates code reuse and show how polymorphism is achieved through inheritance using virtual functions. 4+6=10
- (b) Explain exception handling in C++. Describe the try-catch block structure and how it handles runtime errors. Provide an example demonstrating exception handling. 3+4+3=10

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(Turn Over)

(4)

- (c) Explain templates in C++ and their advantages. Provide examples of function and class templates and discuss their utility in generic programming. 4+6=10
- (d) Write a C++ program to read and store 10 integers in an array. Then, perform operations like finding the sum, average, maximum and minimum of these numbers.

10

