

# END TERM EXAMINATION

THIRD SEMESTER BCA JANUARY 2024

Paper Code: **BCA-205** Subject: **Object Oriented Programming with C++**

Time: **3 Hours** Maximum Marks: **75**

Note: Attempt five questions in all including Q1 which is compulsory. Select one question from each unit.

### UNIT - III

Q6 i) Write a menu driven program to overload arithmetic binary operators (+, -, \*, /) using user defined type. (10)

ii) Explain different access specifiers with respect to inheritance. (2.5)

OR

Q7 a) WAP for conversion between built in and user defined data type. (7)

b) How to define virtual and pure virtual functions? Explain with a small segment of code. (5.5)

### UNIT - IV

Q8 a) What is an exception? What is the procedure of handling exceptions in C++? How to specify an exception for a function? (8)

b) How generic programming is achieved in C++? How to define generic function? (4.5)

OR

Q9 Write an interactive program to create an employee file. It has to maintain information such as empid, name, qualification, designation and salary. The user must be able to access all details about a person either by entering employee name or by employee id. (12.5)

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Q1 Answer the following (any five): (5x5=25)

- a) What are different types of inheritance? Explain with the help of diagram and example.
- b) Distinguish between data abstraction, data encapsulation and data hiding with example.
- c) What is the difference between structures and classes in C++?
- d) What is the difference between constructor and destructor? Explain with example.
- e) How is polymorphism achieved at a) compile time and b) run time?
- f) What are the functions to open, close, read and write into a file. Give syntax.

### UNIT - I

Q2 Write a menu driven program with the following options:

- i) Check whether a number is even / odd.
  - ii) Check whether a number is divisible by another number.
  - iii) Check whether a character entered is vowel or not. (12.5)
- (Hint: use function overloading)

OR

Q3 Explain the following with example: (2.5x5=12.5)

- a) Inline functions
- b) Reference variable
- c) New and delete operator
- d) Procedure and object oriented programming
- e) Object and instance

### UNIT - II

Q4 What is a friend function? What are its various characteristics? Explain with example. Can we have a friend class? (12.5)

OR

Q5 Can we overload constructors? If yes, please explain different types of constructors with example. (12.5)

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