

Faculty of Science / Engineering

End Semester Examination May 2025

CA3CO05 Object Oriented Programming

Programme	: BCA / BCA-MCA (Integrated)	Branch/Specialisation	: -
Duration	: 3 hours	Maximum Marks	: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary.
Notations and symbols have their usual meaning.

Section 1 (Answer all question(s))

Marks CO BL

1 1 1

Q1. What is data encapsulation?

Rubric	Marks
Combining data and functions into a single unit	1

- Hiding implementation details from the user
- Combining data and functions into a single unit
- Allowing multiple functions with the same name
- None of these

Q2. Which of the following statements is FALSE about Object-Oriented Programming?

1 2 1

Rubric	Marks
OOP makes debugging more difficult.	1

- OOP increases code reusability.
- OOP can model real-world entities.
- OOP makes debugging more difficult.
- OOP allows for better data security through encapsulation.

Q3. Which jump statement is used to terminate a loop immediately?

1 1 1

Rubric	Marks
break	1

- continue
- break
- goto
- exit

Q4. Which of the following best describes implicit type conversion?

1 2 2

Rubric	Marks
Automatically performed by the compiler	1

- Automatically performed by the compiler
- Must be explicitly defined by the user
- Results in data loss
- Can only be performed in floating-point operations

Q5. Which of the following cannot be declared as a friend function?

1 3 1

Rubric	Marks
A constructor	1

- A member function of another class
 A constructor A global function
 An overloaded operator

Q6. If a class has only private constructors, which statement is TRUE?

1 1 1

Rubric	Marks
Objects cannot be created outside the class	1

- Objects cannot be created outside the class
 The class must use operator overloading The class cannot have friend functions
 The class cannot have member functions

Q7. Which function is used for operator overloading?

1 1 1

Rubric	Marks
All of the above	1

- operator()
 operator= operator+
 All of the above

Q8. Which of the following statements about pure virtual functions is FALSE?

1 2 1

Rubric	Marks
They must be implemented in the base class	1

- They must be implemented in the base class
 Derived classes must override them to instantiate objects A class containing a pure virtual function is abstract
 They have =0 in their declaration

Q9. What will happen if the close() function is not called on an open file?

1 2 1

Rubric	Marks
The file automatically closes when the object goes out of scope.	1

- The file remains open until the program terminates.
 It results in memory leakage. The file automatically closes when the object goes out of scope.
 The file data is corrupted.

Q10. What is the primary purpose of exception handling in C++?

1 1 1

Rubric	Marks
To handle runtime errors gracefully	1

- To handle syntax errors
 To handle runtime errors gracefully To provide better performance
 To avoid using loops

Section 2 (Answer all question(s))

Marks CO BL

Q11. Differentiate between static and dynamic binding.

2 1 1

Rubric	Marks
Differentiate between static and dynamic binding. 1 mark for each difference	2

Q12. Compare and contrast the structured and object-oriented programming paradigms.

3 3 2

Rubric	Marks
Compare and contrast the structured and object-oriented programming paradigms. (any three differences)	3

Q13.(a) What is polymorphism? Discuss different ways in which polymorphism can be implemented in OOP.

5 2 1

Rubric	Marks
Definition polymorphism ,Three types of polymorphism ,Diagram (OR)	5

(b) Brief different features of OOPs.

Rubric	Marks
Brief different features of OOPs. At least 5 points	5

Section 3 (Answer all question(s))

Marks CO BL

Q14. Discuss any two manipulators with the help of an example.

2 3 2

Rubric	Marks
Description of 1st manipulator Example,Description of 2nd manipulator Example	2

Q15.(a) Explain break, continue, goto and exit with appropriate examples.

8 2 1

Rubric	Marks
Explanation of break and Example,Explanation of continue and Example, Explanation of goto and Example, Explanation of exit and Example	8

(OR)

(b) Discuss memory management operators in C++ with example. Write a C++ program to illustrate one use of scope resolution operator.

Rubric	Marks
Memory management operators in C++. Explanation of new with an example, Explanation of delete with an example , C++ program for scope resolution operator	8

Section 4 (Answer all question(s))

Marks CO BL

Q16. What do you understand by friend function?

3 2 2

Rubric	Marks
Friend function	3

Q17. (a) What is a constructor? Can there be more than one constructor for a class? Justify?

7 2 1

Rubric	Marks
Constructor , Can there be more than one constructor for a class, Justify.	7

(OR)

- (b)** What are member functions? Differentiate between call by value and call by reference with example.

Rubric	Marks
Member functions , Differentiate between call by value and call by reference	7

Section 5 (Answer all question(s))

Marks CO BL

4 4 2

Q18. Specify rules for creating virtual function. Define pure virtual function.

Rubric	Marks
Rules for creating virtual function , Pure virtual function definition	4

Q19. (a) Explain the concept of overloading. Differentiate between function and operator overloading.

6 2 1

Rubric	Marks
Concept of overloading , Differentiate between function and operator overloading.	6

(OR)

- (b)** Discuss about the different types of inheritance in C++ with suitable example.

Rubric	Marks
At least 4 types of inheritance in C++ with suitable example. 1.5 marks each	6

Section 6 (Answer any 2 question(s))

Marks CO BL

5 2 1

Q20. Explain different types of file mode.

Rubric	Marks
At least 3 types of file mode.	5

Q21. Explain exception handling in detail. List any four standard exceptions.

5 3 1

Rubric	Marks
Explain exception handling in detail. List any four standard exceptions. Explanation (1 mark) Exceptions (1 mark each)	5

Q22. What are input and output streams? What is the significance of fstream.h file?

5 3 2

Rubric	Marks
Input and output streams , Significance of fstream.h file	5
