

This question paper contains 3 printed pages.

002263

Roll No. 5802338

B.C.A. (Sem. - III)

UG0801

BCA-63T-203

B.C.A. Three/Four Year (Semester - III)
EXAMINATION - Dec. 2025 (Held in Feb. 2026)

(Faculty of Science)

Subject - BCA

Object Oriented Programming Through C++

Time Allowed: Three Hours

Maximum Marks: 80

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

किसी भी परीक्षार्थी को पूरक उत्तर-पुस्तिका नहीं दी जाएगी। परीक्षार्थियों को समस्त प्रश्नों के उत्तर मुख्य उत्तर पुस्तिका में ही लिखने चाहिए।

Answers to short answer-type questions must be given in sequential order. Similarly, all the parts of one question of descriptive part should be answered in one place in the answer-book.

लघुत्तरात्मक प्रश्नों के उत्तर प्रश्नों के क्रमानुसार ही दें। इसी प्रकार किसी भी एक वर्णनात्मक प्रश्न के अन्तर्गत पूछे गए विभिन्न प्रश्नों के उत्तर, उत्तर-पुस्तिका में एक ही स्थान पर क्रमानुसार हल करने चाहिए।

Write your roll number on the question paper before start writing answers of questions.

प्रश्नों के उत्तर लिखने से पूर्व प्रश्न-पत्र पर रोल नम्बर अवश्य लिखिए।

Question paper consists of two parts A and B.

प्रश्न पत्र में दो भाग अ और ब होंगे।

PART A: 20 marks भाग - अ : 20 अंक

Part A is compulsory having 10 very short answer-type questions (with a limit of 20 words) of two marks each. The first question is based on knowledge, understanding and applications of the topics/text covered in the syllabus.

भाग अ में दो अंक के 10 अति लघु उत्तरीय प्रश्न (20 शब्दों की सीमा के साथ) अनिवार्य हैं। पहला प्रश्न पाठ्यक्रम में शामिल विषयों/पाठ के ज्ञान, समझ और अनुप्रयोगों पर आधारित है।

PART - B : 60 marks भाग — ब : 60 अंक

Part B of the question paper is divided into four units comprising question numbers 2-5. There is one descriptive question from each unit with internal choice. Each question will carry 15 marks.

प्रश्न पत्र का भाग ब प्रश्न संख्या 2-5 सहित चार इकाइयों में विभाजित है। प्रत्येक इकाई से आंतरिक विकल्प के साथ एक वर्णनात्मक प्रश्न है। प्रत्येक प्रश्न 15 अंक का है।

PART - A / भाग — अ

1. (a) What is encapsulation in Object-oriented Programming?
- (b) State one key difference between structured programming and object-oriented programming.
- (c) Write a simple C++ class called Circle with a member function to compute area, given radius.
- (d) What is a Constructor? What is its main purpose in a class?
- (e) What is single inheritance? Give an example.
- (f) Which Keyword is used in C++ to enable late binding (runtime polymorphism)?
- (g) What is operator overloading in C++?
- (h) What are templates in C++?
- (i) What is the function of ifstream and ofstream classes in C++ file handling?
- (j) How would you copy contents from one file to another in C++?

PART - B

UNIT - I

2. (a) Explain the evolution of object-oriented programming. How does it differ from procedure-oriented programming? 7
- (b) Discuss the main features of OOP such as abstraction, encapsulation, inheritance, and polymorphism with suitable examples. 8

OR

- (a) Explain the concept of user-defined data types in C++. Give a suitable example. 7
- (b) Describe how polymorphism and overloading contribute to code flexibility in C++. 8

UNIT - II

3. (a) Discuss different types of data types and their importance in C++. 7
- (b) What is a Constructor? Explain different types of constructors in C++ with syntax and examples. 8

OR

- (a) Differentiate between access specifiers: public, private, and protected. Provide examples. 7
- (b) Explain inline functions and friend functions in C++ with code examples. 8

UNIT - III

4. (a) Define Inheritance. What are its types in C++? Use suitable diagrams to explain. 7
(b) What are pure virtual functions and abstract classes? Explain their use in C++. 8

OR

- (a) What is the difference between function overloading and operator overloading in C++? 7
(b) What is a copy constructor? Write an example illustrating its use. 8

UNIT - IV

5. (a) Write a program to read from one file and write to another file in C++. 7
(b) What is exception handling in C++? Write a short program showing try-catch mechanism. 8

OR

- (a) Discuss ofstream, ifstream, and fstream classes with appropriate program segments. 7
(b) What are state member functions? Discuss functions like eof(), fail(), and good() with example. 8