

UG0801

BCA-63T-203

Three/Four Year B.C.A. III Semester Examination, December-2024
(Faculty of Science)

Subject-BCA

Object Oriented Programming Through C++

Time Allowed : Three Hours

Maximum Marks: 80

समय : तीन घंटे

अधिकतम अंक : 80

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

किसी भी परीक्षार्थी को पूरा उत्तर-पुस्तिका नहीं दी जायेगी। परीक्षार्थियों को चाहिए कि वे मुख्य उत्तर पुस्तिका में ही समस्त प्रश्नों के उत्तर लिखें।

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 question paper before start writing answers of questions.

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

Note:- 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 number 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।

Part-A

1. Write short answer to the following:

[2×10=20]

- (a) What is OOP paradigm?
- (b) What do you mean by overloading?
- (c) What is the role of new and delete operator?
- (d) What are the Member and Non-member Functions?
- (e) Which operators cannot be overloaded?
- (f) What is this pointer?
- (g) What is member access control?
- (h) What is base and derived class?
- (i) What is Generic Programming?
- (j) What is Function Template?

Part-B

2. What is OOP and what are the essential concepts of Object-Oriented Programming (OOP)? Explain each.

[3+12]

OR

✓(a) Differentiate between the functional programming and OOP approach. [08]

✓(b) What are the advantages of OOP? [07]

3 ✓(a) What is structure? What is the difference between class and structure? [2+5]

✓(b) Explain the concept of constructors and destructors in C++ with examples. [08]

OR

(a) What is a friend function? What are the merits and demerits of using friend functions? [2+6]

(b) Write a program in C++ calculate factorial value using friend function. [07]

4. (a) What is operator overloading in C++? Demonstrate with an example how to overload the "+" operator. [4+6]

(b) What are the difference between early and late binding? [05]

OR

Write short note on:

✓(a) Importance of Inheritance [05]

✓(b) Multiple and Multi Level inheritance [05]

✓(c) Copy Constructor [05]

5. Explain the concept of templates in C++. How are function templates and class templates defined and used? Provide detailed examples for each. [5+10]

OR

What is Exception and how many types? Explain the Exception handling mechanism in C++? [5+10]
Explain with suitable example.

(50%)