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B.C.A. 4th Semester (Full & Re-Appeal)  
Examination, May-2023  
OBJECT ORIENTED DESIGN AND  
PROGRAMMING  
Paper- BCA-208

Time allowed : 3 hours]

[Maximum marks : 80

*Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination*

*Note: Attempt five questions. Question No. 1 is compulsory. Select one question from each unit. All questions shall carry equal marks.*

1. (a) What is Variable?
- (b) What is recursion?
- (c) What is Destructor?
- (d) What is this pointer?
- (e) What is friend function?
- (f) What is Overriding?
- (g) What is iostreams?
- (h) What is iterators?

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**Unit-I**

2. (a) Describe the various characteristics of OOP.  
(b) What are operators? Enumerate various operators supported by C++.
3. (a) Write the program to find the sum of first 10 natural number using do loop.  
(b) Explain different types of selection structure with their syntax.

**Unit-II**

4. What is constructor? Explain different type of constructor. Can we have more than one constructor in a class? If yes, explain the need for such a situation.
5. (a) What is a reference type in OOP? Compare Reference type and Pointer.  
(b) What do you mean by static member function? Explain with example.

**Unit-III**

6. Explain :
  - (i) Abstract Class
  - (ii) Virtual Function
  - (iii) Static Function
  - (iv) Ambiguity in multiple inheritance

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7. What does inheritance mean in C++? What are different forms of inheritance? Give an example for each. How containership differ from inheritance? Explain.

**Unit-IV**

8. (a) What do you mean by Template? Write a program to demonstrate function template.  
(b) What is an exception handler? What are the steps involved in exception handling? Explain.
9. (a) Explain :
  - (i) Name Space
  - (ii) Hashes  
(b) What do you mean by string? Explain various function with example.

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