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BCA-301

B.C.A. III Year Examination, 2017

Paper–I

(Object Oriented Programming Using C++)

Time : Three Hours
Maximum Marks : 100

PART - A (खण्ड-अ) [Marks : 20

Answer all questions (50 words each).
All questions carry equal marks.
सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर पचास शब्दों से अधिक न हो।
सभी प्रश्नों के अंक समान हैं।

PART - B (खण्ड-ब) [Marks : 50

Answer *five* questions (250 words each).
Selecting *one* from each unit. All questions carry equal marks.
प्रत्येक इकाई से **एक-एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्न कीजिए।
प्रत्येक प्रश्न का उत्तर 250 शब्दों से अधिक न हो।
सभी प्रश्नों के अंक समान हैं।

PART - C (खण्ड-स) [Marks : 30

Answer any *two* questions (300 words each).
All questions carry equal marks.
कोई **दो** प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर 300 शब्दों से अधिक न हो।
सभी प्रश्नों के अंक समान हैं।

PART-A

UNIT - I

1. (a) What is object-oriented programming ?

(b) Name dynamic memory allocation and deallocation operators in C++.

UNIT - II

(c) What is 'This' pointer ?

(d) How constructors and destructors are called ?

UNIT - III

(e) What do you mean by the term Polymorphism ?

(f) Discuss the significance of derived class.

UNIT - IV

(g) Write the syntax of defining functions templates.

(h) How exceptions are different from errors.

UNIT - V

(i) What is STL ?

(j) What are different modes in which a file can be opened?

PART-B

UNIT - I

2. Explain the main concepts of Object-Oriented Programming by taking suitable examples.

3. Explain the difference between implicit and explicit type conversion using example.

UNIT - II

4. Write an overloaded function 'area' to calculate the area of a circle, rectangle and square.

5. What is friend function ? Is they are closely related to overloading of functions.

UNIT - III

6. Why pure virtual functions are used in C++ ? Is one can create objects of abstract class ?

7. What do you mean by inheritance ? Explain various types of inheritances available in C++.

UNIT - IV

8. What is user defined exceptions ? How they are catched and throw using try-catch block of C++ ?

9. Design and implement a stack as a class template. Write the main() function to show the use of stack template for data types, integer and float.

UNIT - V

10. What are containers in STL ? Explain various types of containers in STL.

11. Write a C++ program using files to add records in a file and then copy all records from one file to another file.

PART-C

UNIT - I

12. What is inline function ? In which situations would you make a function inline ? Differentiate between Macros and Inline functions.

UNIT - II

13. Explain operator overloading. Write a C++ program to find the sum of two complex numbers using an overloaded + operator.

UNIT - III

14. Write the importance of polymorphism ? How dynamic binding is achieved using virtual functions ?

UNIT - IV

15. How is exception handling performed in C++ ? Explain the use of try and catch blocks in exception handling.

UNIT - V

16. Write a program in C++ that maintains the list of students containing their personal details in a file. Write code for creating, reading and updating this file.