XEV (H-3) – BCA (6)

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Time : 3 hours

Full Marks : 75

Candidates are required to give their answers in their

Own words as far as practicable.

The questions are of equal value.

Answer any five questions.

Question no.1 is compulsory

1. Choose the correct answer :

(a) In C++ the index of an array starts with :

(i) Any negative value
(ii) Any positive value
(iii) Value 1
(iv) Value 0

(b) # include is a :

(i) Compiler statement
(ii) Debugging statement
(iii) Pre- Processor statement
(iv) None of the above

(c) Inline function acts as a

(i) Function
(ii) Macro
(iii) Operator
(iv) Manipulator

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(d) **Free store operators is (are)**

(i) **(double colon)**
(ii) **& (ampersand)**
(iii) *** (star)**
(iv) **new, delete**

(e) **ios represents :**

(i) **A class member function**
(ii) **A constant object**
(iii) **A stream**
(iv) **A base class**

(i) **Which of the following method is used to initialize the instance Variable of a class :**

(i) **Class**
(ii) **Public**
(iii) **Contractor**
(iv) **Destructor**

2. (a) **What is the difference between Abstract class and an Interface.**

(b) **What does the "final" keyword mean in front of a variable, a method and a class ?**

© **What a java program to read in two matrices from the keyboard and computer their sum Overload to string 0 method to display the result matrix in row and column form.**

3. (a) **Write a program using applet and awt to design a digital clock.**

(b) **Explain the dynamic method dispatch with the help of coding.**

(c) **What do you understand by inter thread communication? Explain it.**
(c) **Explain main key consideration/ Buzzwords of Java.**

4. (a) **Write short note on exception handling in Java.**
(b) **Distinguish between static and instance members of class.**
© **What does the "final" keyword mean in front of a variable, a method and a class?**
(d) **Write a Java Programme to sort an array of strings entered through the keyboard.**

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5. (a) What do you understand by deadlock in Java ? Explain with the help of an example.

(b) Why do we need wrapper class, explain with the help of an example?

© Compare string and string Buffer classes.

(d) Design an applet to display three buttons “Red”, “Green” and “Blue”. The color of the background changes according to button pressed by the user. Also, write the HTML code to display the applet.

6. (a) What is Artificial Intelligence (AI)? Explain domain areas of AI.

(b) Explain the uses of computer animations. How it plays vital role in today’s life ?

(c) Discuss the data encryption and decryption methods used in cryptography.

(e) Explain the various uses of Asynchronous Teller Machine (ATM).

7. (a) What are the differences between pointers to constants and constants and constant pointers? Give examples.

(b) What is runtime memory management? What support is provided by C++ for this and how does it differ from C’s memory management.

(c) What is containership or delegation in C++ ? How does it differ from inheritance ? Explain with suitable example.

(d) What are the different forms of inheritance supported by C++ ? Explain by writing statements of each type.

8. (a) Explain the concept of operator overloading ? Illustrate with suitable examples. What are the operators that cannot be overloaded in C++ ?

(b) What is a copy constructor in C++? What are the advantages of a copy constructor? Give examples.

(c) Write down all the rules with respect to virtual functions.

(d) what is class template in C++? Write a template- based complete pr9ograme for adding two objects of the vector class.

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Use dynamic data members instead of arrays for storing vector Elements.

9. (a) How can operator be used as unary operator?

(b) What are the merits and demerits of friend function in C++?

(c) Why does the function arguments are called as "signatures" ? Give Example.

(d) How do structures in 'C ' and C++' differ? How does a 'C++' Structure differ from a class ?

10. (a) When is it necessary to use member-wise initialization list (also known as header initialization list) in 'C++'

(b) Explain stream classes, stream class hierarchy and stream manipulators of C++.

(c) Justify the use of constructors and destructors in C++.

(d) Write a program to concatenate two strings using operator Overloading.

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