|  |
| --- |
| Question 4 |

Predict the output of following C++ program.

|  |  |
| --- | --- |
| #include<iostream>  using namespace std;    int &fun()  {      static int x = 10;      return x;  }  int main()  {      fun() = 30;      cout << fun();      return 0;  } | |
| A | Compiler Error: Function cannot be used as lvalue | |
| B | 10 | |
| C | 30 | |

Explanation:

**When a function returns by reference, it can be used as lvalue**. Since x is a static variable, it is shared among function calls and the initialization line "static int x = 10;" is executed only once. The function call fun() = 30, modifies x to 30. The next call "cout << fun()" returns the modified value.

|  |
| --- |
| Question 5 |

|  |  |
| --- | --- |
| #include<iostream>  using namespace std;    int &fun()  {      int x = 10;      return x;  }  int main()  {      fun() = 30;      cout << fun();      return 0;  } | |
| A | May cause runtime error | |
| B | May cause compiler error | |
| C | Always works fine. | |
| D | 0 | |

Explanation:

Since we return reference to a local variable, the memory location becomes invalid after function call is over. Hence it may result in segmentation fault runtime error.

|  |
| --- |
| Question 6 |

Output of following C++ program?

|  |  |
| --- | --- |
| #include<iostream>  using namespace std;    int main()  {    int x = 10;    int& ref = x;    ref = 20;    cout << "x = " << x << endl ;    x = 30;    cout << "ref = " << ref << endl;    return 0;  } | |
| A | x = 20  ref = 30 |
| B | x = 20  ref = 20 |
| C | x = 10  ref = 30 |
| D | x = 30  ref = 30 |