**Introduction to C++ Programming**

**Sheet 1**

Q1 .**Write C++ statement(s) that accomplish the following:**

1. **Declare int variables x and y. Initialize x to 25 and y to 18.**
2. **Declare and initialize an int variable temp to 10 and a char variable ch to 'A'.**
3. **Update the value of an int variable x by adding 5 to it.**
4. **Declare and initialize a double variable payRate to 12.50.**
5. **Copy the value of an int variable firstNum into an int variable tempNum.**
6. **Swap the contents of the int variables x and y. (Declare additional variables, if necessary.)**
7. **Suppose x and y are double variables. Output the contents of x, y, and the expression x + 12 / y - 18.**
8. **Declare a char variable grade and set the value of grade to 'A'.**
9. **Declare int variables to store four integers.**
10. **Copy the value of a double variable z to the nearest integer into an int variable x.**

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| 1. int x, y;   x = 25;  y = 18;  b. int temp = 10;  char ch = 'A';  c. x = x + 5;  d. double payRate = 12.5;  e. tempNum = firstNum;  f. temp = x;  x = y;  y = temp;  g. cout << x << " " << y << " " << x + 12 / y - 18 << endl;  h. char grade = 'A';  i. int num1, num2, num3, num4;  j. x = static\_cast<int>(z + 0.5); |

**Q2. Suppose x, y, and z are int variables and w and t are double variables.**

**What value is assigned to each of these variables after the last statement executes?**

1. **x = 23;**
2. **y = 35;**
3. **x = x + y / 4 - 3;**
4. **z = x % 3;**
5. **w = 28 / 3 + 6.5 \* 2;**
6. **t = x / 4.0 + 15 % 4 - 3.5;**

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| 1. x = 28 2. y = 35 3. z = 1 4. w = 22.00 5. t = 6.5 |

**Q3. The following program has syntax errors. Correct them. On each successive line, assume that any preceding error has been corrected.**

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| #include <io\_stream>  const int TOP\_NUM = 753,409;  const PAY\_RATE = 18.35  main() int  {  int testScore, projectScore;  double temp;  double payCheck  testScore = 88;  projectScore = 22;  cout << testScore << " " << projectScore << endl;  temp = 82;  newTemp = testScore + 2 \* projectScore;  first = 2 \* TOP\_NUM;  TOP \_NUM = TOP \_NUM - 919;  cout << first << " " TOP\_NUM << endl;  paycheck = hoursWorked \* PAY\_RATE  cout << "Wages = " << paycheck << endl;  return 0;  } |

Answer:

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| . A correct answer is:  #include <iostream>  using namespace std;  const int TOP\_NUM = 753409;  const double PAY\_RATE = 18.35;  int main()  {  int testScore, projectScore;  double temp;  double payCheck;  int newTemp;  int first;  double hoursWorked;    testScore = 88;  projectScore = 22;    cout << testScore << " " << projectScore << endl;  temp = 82;  newTemp = testScore + 2 \* projectScore;  first = 2 \* TOP\_NUM;  cout << first << " " << TOP\_NUM << endl;  cout << "Enter hours worked: ";  cin >> hoursWorked;  cout << endl;  payCheck = hoursWorked \* PAY\_RATE;    cout << "Wages = " << payCheck << endl;  return 0;  } |