Sheet 01

Assume any missing data.

1. How may the int variables months, days, and years be defined in one statement, with months initialized to 2 and years initialized to 3?
2. Write assignment statements that perform the following operations with the variables a, b, and c.
   (a) Adds 2 to a and stores the result in b.
   (b) Multiplies b times 4 and stores the result in a.
   (c) Divides a by 3.14 and stores the result in b.
   (d) Subtracts 8 from b and stores the result in a.
   (e) Stores the value 27 in a.
   (f) Stores the character 'K' in c.
   (g) Stores the ASCII code for 'B' in c.
3. Modify the following program so it prints two blank lines between each line of text.

```
#include <iostream>
using namespace std;
int main()
{
cout << "Two mandolins like creatures in the";
cout << "dark";
cout << "Creating the agony of ecstasy.";
cout << " - George Barker";
return 0;
}
```

4. What will the following programs print on the screen?

A)
```
#include <iostream>
using namespace std;
int main()
{
int freeze = 32, boil = 212;
freeze = 0;
boil = 100;
cout << freeze << endl << boil << endl;
return 0;
}
```

B)
```
#include <iostream>
using namespace std;
int main()
{
int x = 0, y = 2;
x = y * 4;
cout << x << endl << y << endl;
return 0;
}
```

C)
```
#include <iostream>
using namespace std;
int main()
{
```

```
   cout << "I am the incredible";
   cout << "computing\nmachine";
   cout << "\nand I will\namaze\n";
   cout << "you.";
   return 0;
}
```

D)
```
#include <iostream>
using namespace std;
int main()
{
cout << "Be careful\n";
cout << "This might/n be a trick ";
cout << "question\n";
return 0;
}
```

E)
```
#include <iostream>
using namespace std;
int main()
{
int a, x = 23;
a = x % 2;
cout << x << endl << a << endl;
return 0;
}
```

5. Multiple Choice Questions

- Every C++ program must have a

A) cout statement
B) function main
C) #include statement
D) All of the above

- Preprocessor directives begin with a

A) #
B) !
C) <
D) *
E) None of the above

- The following data

72
'A'
"Hello World"
2.8712
are all examples of
A) Variables
B) Literals or constants
C) Strings
D) None of the above

6. Assume w = 5, x = 4, y = 8, and z = 2. What value will be stored in result in each of the following statements?

A) result = x + y;
B) result = z * 2;
C) result = y / x;
D) result = y − z;

E) result = w % 2;

7. How would each of the following numbers be represented in E notation?
A) 3.287 x 10^6
B) −978.65 x 10^12
C) 7.65491 x 10^−3
D) −58710.23 x 10^−4

8. Write a program that can calculate and display the power consumption (W) for a resistor (R) in a circuit; knowing the current (I) or/and the voltage (V) for this resistor. All values MUST be input from the keyboard.

9. Write a simple program to convert temperatures expressed in Fahrenheit to Celsius using formula

$$T_C = (T_F - 32) \cdot \frac{5}{9}$$

First convert the formula, and then use variables with the proper types and names.

10. An electronics company sells circuit boards at a 35 percent profit. Write a program that will calculate the selling price of a circuit board that costs $14.95. Display the result on the screen.

11. Write a program that displays the following pieces of information, each on a separate line:
Your name
Your address, with city, state, and ZIP code
Your telephone number
Your college major
Use only a single cout statement to display all of this information.

12. Write a program that displays the following pattern on the screen:

```
   *
  ***
 *****
*******
```