COMPUTER PROGRAMMING ASSIGNMENT – BSCS – I – FALL 2017
Department of Computer Science & Engineering Air University Multan Campus

MAX MARKS: 65 Due Date: 06- 11- 2017

Note submit all your Answers in Handwritten form. Attach output of each program with a screen short after successful execution of the code.

Q. No. 01) (10+5+5= 25 Marks)

i. Write a statement (or comment) to accomplish each of the following (assume that using directives have been used for cin, cout and endl):

a) State that a program calculates the product of three integers.
b) Declare the variables x, y, z and result to be of type int (in separate statements).
c) Prompt the user to enter three integers.
d) Read three integers from the keyboard and store them in the variables x, y and z.
e) Compute the product of the three integers contained in variables x, y and z, and assign the result to the variable result.
f) Print "The product is " followed by the value of the variable result.

ii. (Printing) Write a program that prints the numbers 1 to 4 on the same line with each pair of adjacent numbers separated by one space. Do this several ways. (5)

a) Using one statement with one stream insertion operator.
b) Using one statement with four stream insertion operators.
c) Using four statements

iii. Using the statements you wrote in Question No. 01, write a complete program that calculates and displays the product of three integers. Add comments to the code where appropriate. (5)

Iv. *(Order of Evaluation)*

State the order of evaluation of the operators in each of the following C++ statements and show the value of x after each statement is performed. (5)

a) x = 7 + 3 * 6 / 2 - 1;
b) x = 2 % 2 + 2 * 2 - 2 / 2;
c) x = (3 * 9 * (3 + (9 * 3 / (3))));

Q. No. 02) (10 Marks)

(Integer Equivalent of a Character) Here is a peek ahead. In this chapter you learned about integers and the type int. C++ can also represent uppercase letters, lowercase letters and a considerable variety of special symbols. C++ uses small integers internally to represent each different character. The set of characters a computer uses and the corresponding integer representations for those characters are called that computer's character set. You can print a character by enclosing that character in single quotes, as with

```
cout << 'A'; // print an uppercase A
```

You can print the integer equivalent of a character using static_cast as follows:

```
cout << static_cast< int >( 'A' ); // print 'A' as an integer
```

This is called a cast operation When the preceding statement executes, it prints the value 65 (on systems that use the ASCII character set).

Now what you are required to do?

Write a program that prints the integer equivalent of a character typed at the keyboard. Store the input in a **Variable of type char.** Test your program several times using **uppercase letters, lowercase letters, digits and special characters (like $).**

Q No. 3 (15 Marks)

(Car-Pool Savings Calculator) Research several car-pooling websites. Create an application that calculates your daily driving cost, so that you can estimate how much money could be saved by car pooling, which also has other advantages such as reducing carbon emissions and reducing traffic congestion. The application should input the following information and display the user's cost per day of driving to work:

a) Total miles driven per day.
b) Cost per gallon of gasoline.
c) Average miles per gallon.
d) Parking fees per day.
e) Tolls per day

Q. No. 04) (15 Marks)

(Diameter, Circumference and Area of a Circle) (Write a program that reads in the ***radius*** of a circle as an integer and prints the circle's ***diameter, circumference and area***. Use the constant value ***3.14159 for π***. Do all calculations in output statements.