

**National University of Computer & Emerging Sciences, Karachi**  
**Spring - 2017 CS-Department**  
**MidTerm 2**  
**27<sup>th</sup> March 2017, 11:00 am – 12:00 am**



<b>Course Code: CS102</b>	<b>Course Name: Introduction to Computing</b>
<b>Instructor Names: M. Shahzad / Noman Atique</b>	
<b>Student Roll No:</b>	<b>Section No:</b>

Instructions:

- Return the question paper
- Read each question completely before answering it. There are **3 questions and 2 pages**.
- In case of any ambiguity, you may make assumption. But your assumption should not contradict any statement in the question paper.
- All the answers must be solved according to the sequence given in the question paper.
- This paper is subjective

**Time:** 60 minutes.

**Max Marks :** 20 points

Question 1( 5 Points)

State whether the following statements are True or False. Justify your answer with reason:

1. The variables commonly used in C functions are available to all the functions in a program.
2. To return the control back to the calling function we must use the keyword **return**.
3. The same variable names can be used in different functions without any conflict.
4. Every called function must contain a **return** statement.
5. A function may contain more than one **return** statements.
6. Each **return** statement in a function may return a different value.
7. A function can still be useful even if you don't pass any arguments to it and the function doesn't return any value back.
8. Same names can be used for different functions without any conflict.
9. A function may be called more than once from any other function.
10. It is necessary for a function to return some value.

Question 2 (5 Points)

Given following paragraph, write a program using any built-in string functions to perform following actions:

1. Display the no. of sentences in a given paragraph.
2. Display the word count per sentence.

*" Think 100 times before you take a decision, But once that decision is taken, stand by it as one man. With faith, discipline and selfless devotion to duty, there is nothing worthwhile that you cannot achieve."*

Question 3( 5 Points)

Given below is an incomplete program. For a given input of an array containing elements of values either 0 or 1. The program below is supposed to rearrange the array such that all the entries with value 0 should

come before the entries with value 1. For the input of an array `a[10] = {0, 1, 1, 1, 0, 1, 0, 0, 1, 0}` as initialized in the program below, the program should produce the result as `a[10] = {0, 0, 0, 0, 0, 1, 1, 1, 1, 1}`. Complete the program below. You are not supposed to use any additional array. You can use additional scalar variables if required. Note that the array is scanned only once i.e., each element of the array is visited only once.

```
void main(){
int i, low, high;
int a[10] = {0, 1, 1, 1, 0, 1, 0, 0, 1, 0};
int temp;
low = 0;
high = 9;
while (low <= high)
{
    switch ( a[low] )
    {
        case 0:
            _____
            _____
            _____
            low++;
            break;
        case 1:
            _____
            _____
            _____
            high++;
            break;
        default:
            break;
    }
}
```

#### Question 4 (5 Points)

In Microsoft Word “Shift+F3” short cut key is used to change different forms of sentence, like if you select a sentence “*Pakistan is my country*” and press Shift+F3 then it first converts it into “*Pakistan Is My Country*”, means capitalizing each word’s first character.

You are required to write a code of a C function **toggleCases( )** that takes one character array [string] as parameter and converts first and last alphabet of each word in that string into capital.

For example if your function receives:

***I have a passion to become programmer.***

Then it should convert it in following form:

***I HavE A PassioN TO BecomE ProgrammeR.***

***Best of Luck!***