



University of Dhaka  
Institute of Information Technology  
Bachelor of Information Technology (Software Engineering)  
Semester Final Examination, 2020  
CSE 101: Structured Programming



Marks: 30 Time: 1.5 Hour (1 Hour 15 Minutes to Answer and 15 Minutes to upload)

Professionalism	Excellence	Respect
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Answer all the questions. The weight of each question is mentioned at the right side

1.   a. Define the variable? What are the types of variables? Illustrate those with an example C code. 2+1+3  
     b. What are C's data-type modifiers and what is type casting?  
     c. Why C's *for* loop is considered so powerful? Explain with examples.
2.   a. Show that arrays and pointers are interchangeable. 4+2  
     b. Define *structure* and *union* and differentiate those with *array*.
3.   a. Define function parameter and argument with a suitable example. 2+4  
     b. Write a program that takes a string as a command-line argument. Your program uses a recursive function to display the letters reversely.
4.   Take a CSE101 number file containing the marks of 42 students in 100. Since you have to send it over untrusted network, encode marks by swapping each of the mark's lower two bytes. And create another file called encode.txt. Create another function which can decode those marks accordingly in a separate file called decode.txt. 6
5.   a. What do you understand by file and stream in C? Mention all the input and output functions for reading or writing a file in a stream of characters mode. 3+3  
     b. Write a program that takes an input file and a byte number from the command line. Now read the value that the byte number contains in the file. Include full error checking.

Good Luck!!!