Green University of Bangladesh

Department of Computer Science and Engineering

Final Examination (Assignment), Summer 2020

Course Code: CSE 103 **Course Title: Structured Programming**

Full Marks: 20

Sample questions are given below:

[The [CO#] represents mapping of the question with one of the expected outcomes of the course.]

1. What is the basic difference between a structure and a union? Explain with proper examples. [5 Marks] [CO1]

Marks	Level	Descriptions
5	Excellent	The basic difference is stated properly, the difference is described accurately, and a proper example is given.
4	Very Good	The basic difference is stated properly, the difference is described but not perfect, and a proper example is given.
3	Good	The basic difference is stated properly, the difference is described accurately, and an example is not given.
2	Average	The difference is described wrongly, and an example is given.
1	Poor	The difference is described wrongly, and an example is not given.

2. Are there any differences between a loop and a recursive function? Justify your answer with proper examples. [5 Marks] [CO2]

Marks	Level	Descriptions
5	Excellent	The difference is described accurately, and a proper example is given.
4	Very Good	The difference is described accurately, but some little mistakes in the given example.
3	Good	The difference is described weakly, and an example is given.
2	Average	The difference is described wrongly, and an example is given.
1	Poor	The difference is described wrongly, and an example is not given.

3. Suppose you have some words and you want to right justify them, that is, align them to the right. Create a program that reads some words and print it all right justified, in the same order as they appear in the input. [5 Marks] [CO3]

Input:
The first line of the input will contain an integer N ($1 \leq N \leq 50$) indicating the number of following words. Each word is composed of up to 50 letters (‘A’-‘Z’ or 'a'-'z') and will contain at least one letter.

Output:
Print the words padded on the left with space characters so that they are all the same length as the longest word found in that text.

Sample Input	Sample Output
3 Bob Tommy Jim	Bob Tommy Jim
4 LONGEST a LONGER SHORT	LONGEST a LONGER SHORT

Marks	Level	Descriptions
5	Excellent	The logic of the program is perfect, and the program is written correctly.
4	Very Good	The logic of the program is perfect, but there are some little mistakes in the written program.
3	Good	The logic of the program is weak, and the program is written accordingly.
2	Average	The logic of the program is weak, and there are some mistakes in the written program.
1	Poor	The logic of the program is wrong, and the written program is incomplete.

4. Cyber Security is a key issue to protect our daily documents and applications stored and submitted in various platforms. Having a robust encryption system to our generated password is very essential in this perspective. Your task is to create a nice and smooth encrypted password generator. Follow the instructions carefully to build the password generator. [5 Marks] [CO3]

   a. Take a 5 digit integer number from user. Use a function named Input_Number() to take the number from user. If the number is not

exactly of 5 digits, give a warning message to user and exit/abort the program.

b. In case of a 5 digit number, pass each digit of the number to a user defined function named character_extractor() which would return a character corresponding to a digit. Character associated with each digit will be in the following sequence.

1	2	3	4	5	6	7	8	9	0
#	a	t	j	9	E	@	2	F	?

c. Finally, pass your extracted characters in a user defined function named password_generator() to generate a 5 length password.

d. Show the password on screen.

Sample Input-Output:

Input	Output
287	Wrong input
9876543	Wrong input
12345	#atj9
10207	#?a?@
91778	F#@@2

Marks	**Level**	**Descriptions**
5	Excellent	The logic of the program is perfect, and the program is written correctly.
4	Very Good	The logic of the program is perfect, but there are some little mistakes in the written program.
3	Good	The logic of the program is weak, and the program is written accordingly.
2	Average	The logic of the program is weak, and there are some mistakes in the written program.
1	Poor	The logic of the program is wrong, and the written program is incomplete.