

National University of Computer and Emerging Sciences, Lahore Campus



Course:	COAL Lab	Code:	EL2003
Program:	BS (Computer Science)	Semester:	Fall 2022
Duration:	2.5 Hours	T. Marks:	40
Date:	03-01-2023	Weight	40%
Section:	BSC 3(A, B, C, D, E, F, G)	Page(s):	1
Exam:	Final Term		

Instructions/Notes:

- The paper is open notes and open book but the use of the internet, codes, lab manuals, and flash drives is **STRICTLY PROHIBITED**.
- Submit both questions on Google Classroom as well.
- In case of any ambiguity, make reasonable assumptions. Questions during exams are not allowed.
- It is your responsibility to save your code from being copied. All matching codes will be considered cheating cases. **PLAGIARISM** will result in the forwarding of the case to the Disciplinary Committee and negative marks in Lab Final Term.

Question # 1: [Marks 20]

Write a subroutine that takes a string variable as a parameter and prints the vowel count of any string string. For each vowel, the count includes both uppercase and lowercase letters. Your program should print a similar output as shown below in the DosBox Text Mode.

Vowel	Count
a or A	3
e or E	3
i or I	4
o or O	2
u or U	1

Question # 2 [Marks 20]

Design an **Asterisk Xenzia Game (AXG)** in Assembly language. AXG has the following steps: a. At the start an asterisk (*) is displayed at the centre of the DOSBox console.

- On the first keystroke, timer starts.
- Upon clicking the up/down/left/right keyboard button asterisk moves accordingly.
- The user keeps pressing the up/down/left/right to avoid the border of the screen.
- Upon hitting the border of the screen, the game is over.
- Once the game is over, the user is shown his/her time as score.

Best of Luck!