



Department of Genetic Engineering and Biotechnology
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Final Examination Fall 2025

Course Code: 0611-1209

**Course Title: Computer Fundamentals and
Computational Biology**
Course Teacher Initials: DNH
Total Marks: 40

Level and Term: L-1, T-2
Time: 2 Hours

Section: 252 (A+B)

Splitting any answer is strictly prohibited

		Marks
1	(a) List three key features of Microsoft Excel and briefly explain one of them. [CLO2, PLO1, C4]	3
	(b) Discuss the IF function in Excel. Write the syntax and give a biological example of its use. [CLO2, PLO1, C6]	3
	(c) What is a PivotTable in Excel? State one advantage of using it in data analysis. [CLO2, PLO1, C1]	2
2	(a) Explain the $\Delta\Delta C_t$ method for analyzing qPCR data in Excel. [CLO1, PLO2, C2]	3
	(b) List the components of the PowerPoint interface. [CLO3, PLO2, C4]	2
	(c) Describe the steps to create a new presentation and apply a design theme. [CLO3, PLO1, C6]	3
3	(a) What is Microsoft PowerPoint? Explain the design tips for creating effective PowerPoint slides in an academic presentation. [CLO3, PLO2, C1]	3
	(b) Differentiate between <i>Transitions</i> and <i>Animations</i> in PowerPoint. Write the common keyboard shortcuts used in PowerPoint and their functions. [CLO3, PLO2, C4]	5
4	(a) What is genomics? Write the <u>major</u> computational applications in <u>genomics</u> . [CLO2, PLO1, C1]	3
	(b) What is <u>Whole-Cell Modeling</u> ? Write the computational applications of <u>systems biology</u> . [CLO3, PLO2, C1]	3
	(c) Explain the computational applications in the field of <u>clinical</u> and <u>medical</u> sectors. [CLO3, PLO1, C5]	2
5	(a) Why computational toolkits are essential in the field of biological science. [CLO3, PLO2, C1]	2
	(b) What is NCBI? Describe the major databases of NCBI. [CLO1, PLO2, C6]	4
	(c) What are the components of a FASTA & FASTQ formatting? [CLO1, PLO1, C1]	2

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