



Daffodil
International
University

Department of Genetic Engineering and Biotechnology

Faculty of Health and Life Sciences

B. Sc. (Hons.) in Genetic Engineering and Biotechnology

Midterm Examination Fall 2026

Course Code: 0512-2103

Course Title: Cytology

Level and Term: L-2, T-1

Section: 253 (A+B)

Course Teacher Initials: HKC

Time: 1 Hour 30 Minutes

Total Marks: 25

Marks

- ✓ 1. (a) Define cytology. How do you connect cytology and molecular sciences? [CLO1, PLO2, C1] 3
- (b) Illustrate the cell theory. What is protoplasm theory? [CLO1, PLO2, C2] 2
- ✓ 2. (a) How do you relate the cellular organelles and molecular biology. [CLO1, PLO2, C1] 3
- (b) Simplify the cell, chromosome, DNA, gene with a proper diagram? [CLO1, PLO2, C4] 2
- ✓ 3. (a) Construct a brief discussion on the structural abnormalities of chromosomes. [CLO1, PLO2, C3] 4
- (b) Briefly explain the chromosome banding pattern. [CLO1, PLO2, C2] 1
4. (a) What is karyotyping? Briefly discuss the process with figures and mention clinical significance. [CLO1, PLO2, C1] 3
- (b) Explain and relate the modern cytogenetics with molecular biology and genomics. [CLO1, PLO2, C2] 2
- ✓ 5. (a) Recommend the first sight chemistry of chromosomes which relate molecular sciences. [CLO1, PLO2, C5] 3
- (b) Discuss briefly on the Philadelphia chromosome, CML and some acute lymphoblastic leukemias. [CLO1, PLO2, C6] 2