

QP Code: D143661		Total Pages: 1	Name:
			Register No.
FOURTH SEMESTER (CUFYUGP) DEGREE EXAMINATION, APRIL 2026			
BOTANY			
BOT4CJ205 CELL AND MOLECULAR BIOLOGY			
2024 Admission onwards			
Maximum Time :2 Hours			Maximum Marks :70
Section A			
All Questions can be answered. Each Question carries 3 marks (Ceiling : 24 Marks)			
1	Define the "Fluid Mosaic Model" of the cell membrane.		
2	Distinguish between a Prokaryotic and Eukaryotic cell.		
3	Definition of Numerical aberration		
4	What is a "SAT-body" (Satellite chromosome)?		
5	Define Aneuploidy.		
6	What is the C-value Paradox?		
7	Define Hyperchromic effect.		
8	Recall spontaneous mutation.		
9	What is the Central Dogma of molecular biology?		
10	What is collinearity in gene expression?		
Section B			
All Questions can be answered. Each Question carries 6 marks (Ceiling : 36 Marks)			
11	Describe the structure and function of the Nucleolus.		
12	Discuss the role of Mitochondria as the powerhouse of the cell, focusing on its membrane structure.		
13	Explain the morphological features of chromosome.		
14	Organize the structural aberrations of chromosomes.		
15	Describe the Hershey and Chase experiment to prove DNA is the genetic material.		
16	Discuss the molecular mechanism of DNA Replication.		
17	Explain the Operon Concept using the Lac Operon as a model for gene regulation in prokaryotes.		
18	Discuss the different types of mutagens and their specific effects on DNA structure.		
Section C			
Answer any ONE .Each Question carries 10 marks (1x10=10 Marks)			
19	Elaborate the structural and functions of Golgi Complex and Lysosomes.		
20	Explain the Meselson and Stahl experiment for semi-conservative replication.		