

QP CODE: D4BZL2402	(Pages: 2)	Reg. No :
		Name :
FOURTH SEMESTER FYUGP EXAMINATION, APRIL 2026 Discipline Specific Core (DSC) Courses - Major ZOO4CJ204 : CELL BIOLOGY & GENETICS (Credits: 4)		
Time: 2 Hours	Maximum Marks: 70	
Section A		
Answer the following questions. Each carries 3 marks (Ceiling: 24 marks)		
1. List out the functions of a nucleolus.	BL1	CO1
2. List any three functions of lysosome.	BL1	CO2
3. Elucidate the roles of genes and alleles in inheritance.	BL2	CO3, CO4
4. Comment on genomic imprinting.	BL2	CO4
5. How does the cytokinesis differ in animal and plant cells?	BL2	CO1
6. Differentiate between prokaryotic and eukaryotic ribosomal subunits.	BL2	CO2
7. Distinguish between physical and chemical mutagens.	BL2	CO3
8. Briefly explain the X-linked characters.	BL2	CO4
9. A patient exposed to ionizing radiation develops leukemia after several years. Identify the type of carcinogen involved and explain how it induces cancer.	BL3	CO1
10. Distinguish between missense and nonsense mutations.	BL1	CO3
Section B		
Answer the following questions. Each carries 6 marks (Ceiling: 36 Marks)		
11. Distinguish between the prokaryotic and eukaryotic cells.	BL2	CO1
12. Compare and contrast microfilaments, intermediate filaments, and microtubules based on structure, composition, and function.	BL4	CO2
13. Give an account of Mendel's contribution in paving the foundation of genetics.	BL1	CO3
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14.	Explain the role of genetic and environmental factors in multifactorial inheritance.	BL2	CO4
15.	Explain the mechanism and significance of endomitosis.	BL2	CO1
16.	Explain the fluid mosaic model of plasma membrane with suitable illustrations.	BL1	CO2
17.	Explain the allelic interactions involved in the human blood group alleles. Discuss the significance of the Rh factor.	BL2	CO3, CO4
18.	Explain the concept of linkage and linkage maps.	BL2	CO4
Section C			
Answer any one question. Each carries 10 marks (1 x 10 = 10 Marks)			
19.	Illustrate how mitochondrial structure and enzyme localization contribute to oxidative phosphorylation.	BL4	CO2
20.	Explain complete and incomplete linkages in detail with suitable examples.	BL2	CO4
CO : Course Outcome			
BL : Bloom's Taxonomy Levels (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)			