F–7424	Sub. Code
	7MBO2C2

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Botany

GENETICS AND EVOLUTION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Pleiotropy.

2. Expressivity.

3. Maternal Inheritance.

4. Heritability.

5. Germinal Mutation.

6. LOD Score.

7. What are all the components used by Miller in his apparatus?

8. Darwinian Fitness.

9. Allopatric Speciation.

10. Convergent Evolution.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write notes on homologous and non-homologous recombination.

Or

(b) Write notes on sex linked, sex limited and sex influenced traits.

12. (a) Illustrate gene mapping by using somatic cell hybrids.

Or

(b) Illustrate gene mapping with molecular markers.

13. (a) Write notes on Pedigree analysis to study the inheritance of genes in human genetics.

Or

(b) Write notes on karyotypes.

14. (a) Write notes on Lamarckism.

Or

(b) Write notes on evolution of prokaryotes.

15. (a) Write notes on Neutral Theory of Molecular Evolution.

Or

(b) How the gene duplication and divergence are considered as evolutionary event?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explore the extensions of Mendelian principles viz., Codominance, Incomplete dominance and Epistasis.

17. Write an essay on extra chromosomal inheritance.

18. Write an essay on structural and numerical alteration Of chromosomes.

19. Write an essay on evolution of anaerobic metabolism.

20. Illustrate role of molecular tools in protein and nucleotide sequence analysis.

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F–7425	Sub. Code
	7MBO2C3

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Botany

FUNDAMENTAL PROCESSES, CELL COMMUNICATION AND CELL SIGNALING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. DNA Damage.

2. Replication fork.

3. List out any four protein translational inhibitors.

4. Translational Proof-reading.

5. Functions of gap junctions.

6. Hematopoiesis.

7. Auto-immune disease.

8. Adaptive-Immune Cells.

9. Hypersensitivity.

10. TCR

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write notes on DNA damage and repair mechanisms.

Or

(b) Write notes on homologous and site-specific recombination.

12. (a) Write notes on post-translational modification of proteins.

Or

(b) Write notes on protein initiation factors and their regulation.

13. (a) Write notes on bacterial two component systems of cell signalling.

Or

(b) Write notes on neurotransmission and its regulation.

14. (a) Write notes on epitopes.

Or

(b) Differentiate immunogenicity from antigenicity.

15. (a) List out characteristics of primary and secondary immune modulations.

Or

(b) Write short notes cell mediated effector functions.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on structure and function of different types of RNA.

17. Write an essay on control of expression at transcription and translation level in prokaryotic and eukaryotic genes.

18. Write an essay on signalling through G-protein coupled receptors.

19. Elaborate about production of monoclonal antibodies arid their applications.

20. Illustrate immune responses to Mycobacterium tuberculosis infection.

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F–7426

Sub. Code
7MBO2E3

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Botany

Elective: FOOD PROCESSING TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Macronutrients
2. Emulsions
3. Sweeteners
4. Flavouring agent
5. Drug availability
6. Pre-operative diet
7. Dehydration
8. Food wrappers
9. FCI
10. AGMARK

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a short note on the applications of micronutrients.

Or

(b) Describe the factors affecting BMR.

12. (a) Write a short note on detection of food adulterants.

Or

(b) Explain the effects of over consumption of food.

13. (a) Define and explain biotransformation of drugs.

Or

(b) Write a short note on the importance of diet therapy.

14. (a) Highlight the applications of radiation in food preservation.

Or

(b) Discuss about the importance of salting and curing of foods.

15. (a) Define and explain food quality assurance.

Or

(b) Explain physical parameters of food quality.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the physic-chemical parameters of a quality food.

17. Describe source, composition and nutritional importance of food fibres.

18. Explain the importance of diet and nutrients for better administration and action of drugs.

19. Explain the importance of packaging methods and materials in food quality maintenance.

20. Explain about product and process control in food industry.

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