

### M.Sc. DEGREE EXAMINATION, APRIL 2023.

## Second Semester

## Botany

## TAXONOMY OF ANGIOSPERMS AND ECONOMIC BOTANY

## (CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A  $(10 \times 2 = 20)$ 

- 1. Amentiferae
- 2. Sexual system of classification.
- 3. Serotaxonomy
- 4. RFLP
- 5. Holotype
- 6. Monographs
- 7. Monadelphous
- 8. Birthwort family
- 9. Cleistogamy
- 10. Lodicules

**Part B** (5 × 5 = 25)

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

11. (a) Explain the merits of phylogenetic systems of classifications.

Or

- (b) Give short note on evolution of Angiosperms.
- 12. (a) Explain the palynology in relation to taxonomy with examples.

 $\mathbf{Or}$ 

- (b) Expound the types of manual identification keys.
- 13. (a) Enumerate the principles of ICBN.

Or

- (b) Mention the role of botanical gardens in taxonomic research.
- 14. (a) Describe the floral characters of Capparidaceae with floral diagrams.

Or

- (b) Discuss the vegetative and floral characters of Gentianaceae.
- 15. (a) Enlist the economic importance of Poaceae.

### Or

(b) Mention the types of oil yielding plants.

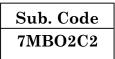
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**Part C**  $(3 \times 10 = 30)$ 

Answer any **three** questions.

- 16. Give the outline of Bentham and Hooker's system of classification and add note on its merits.
- 17. Explain the role of secondary metabolites in plant taxonomy with suitable evidences.
- 18. Give an account on the processes of typification and their types with examples.
- 19. Describe the vegetative and floral characters of Verbenaceae with suitable illustrations.
- 20. Write an account on sources and their uses of spices and condiments studied by you.

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## Botany

# **GENETICS AND EVOLUTION**

### (CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

**Part A**  $(10 \times 2 = 20)$ 

- 1. Define Allele.
- 2. Crossing over.
- 3. Chloroplast genes.
- 4. Molecular markers.
- 5. Define Mutation.
- 6. Chromosomes.
- 7. Nucleotide.
- 8. Define Gene pool.
- 9. Sympatricity.
- 10. Co-evolution.

#### Part B

 $(5 \times 5 = 25)$ 

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

11. (a) Briefly explain the Pleiotropy.

Or

- (b) Elaborately discuss the genomic imprinting.
- 12. (a) Write a short notes on gene mapping methods.

#### $\mathbf{Or}$

- (b) Describe the heritability and its measurements.
- 13. (a) Give a brief account of the mutant types.

#### Or

- (b) Briefly explain the Ploidy and their genetic implications.
- 14. (a) Explain the origin of cells and unicellular evolution.

Or

- (b) Write a short note on origin of eukaryotic cells.
- 15. (a) Briefly explain the concept of Oparin and Haldane.

Or

(b) Write a short note on anaerobic metabolism.

**Part C**  $(3 \times 10 = 30)$ 

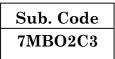
Answer any three questions.

- 16. Write an essay on recombination with suitable diagram.
- 17. Explain in detail the gene mapping by using somatic cell hybrids.

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- 18. Give a detailed account of the structural and numerical alternation of chromosomes.
- 19. Elaborately describe the origin of basic biological molecules.
- 20. Write an essay on concepts and rate of change in gene frequency through natural selection.

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## FUNDAMENTAL PROCESSES, CELL COMMUNICATION AND CELL SIGNALING

(CBCS - 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

**Part A**  $(10 \times 2 = 20)$ 

- 1. Define DNA and RNA.
- 2. Define Capping and elongation.
- 3. Explain about prokaryotes.
- 4. Define tRNA.
- 5. What are the hormones?
- 6. What is Hematopoiesis?
- 7. What is antibody and antigens?
- 8. What are the B and T Cell epitopes?
- 9. Toll like receptors Explain.
- 10. Define MHC molecules.

**Part B** (5 × 5 = 25)

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

11. (a) Explain the DNA replications.

Or

- (b) Write notes on replication fork.
- 12. (a) Briefly explain about transcription activator.

 $\mathbf{Or}$ 

- (b) Write notes on repressor.
- 13. (a) Write a short note on elongation factors.

Or

- (b) Explain about cellular communication.
- 14. (a) What are monoclonal antibodies? Give some examples.

Or

- (b) Give an account on Immunogenicity and their functions.
- 15. (a) Explain about MNC molecules.

Or

(b) Comment on antigen processing.

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# **Part C** (3 × 10 = 30)

Answer any **three** questions.

- 16. Describe the types of RNA and RNA transport.
- 17. Write an essay on initiation complex and their regulation.
- 18. Explain the general principles of cell communication.
- 19. What is the function of antibodies? Explain.
- 20. Activation and differentiation of B and T cells Explain.

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### M.Sc. DEGREE EXAMINATION, APRIL 2023.

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Botany

## Elective — HERBAL BOTANY

#### (CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A  $(10 \times 2 = 20)$ 

- 1. What is codified systems of medicine?
- 2. Give the morphological classification of natural drugs.
- 3. Define powder microscopy.
- 4. Mention the source of centelloside.
- 5. Note on the types of drug evaluation.
- 6. Mention the source of Curcumin.
- 7. What are propagules form medicinal herbs?
- 8. Mention any two well-known export value herbs from Tamil Nadu.
- 9. Name any two cosmetic herbs.
- 10. What are the constituents of herbal shampoo?

**Part B** (5 × 5 = 25)

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

11. (a) List out the Unani medicinal plants.

Or

- (b) How do you describe the morphology of raw drugs.
- 12. (a) Write about organoleptic characters of plant drugs.

Or

- (b) Enlist the therapeutic uses of Adhatoda and *Eugenia*.
- 13. (a) How do you evaluate the phytochemical constituents of plant drugs?

 $\mathbf{Or}$ 

- (b) Write down the procedure for chemical testing of *Allium sativum*.
- 14. (a) List out the medicinal plants suitable for home gardens.

 $\mathbf{Or}$ 

- (b) Write about propagation methods for *Rauvolfia*.
- 15. (a) Give an account on current status of cosmetic industries in India.

Or

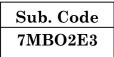
(b) How do you prepare herbal bath oil?

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**Part C** (3 × 10 = 30)

Answer any **three** questions.

- 16. Discuss the Siddha medicinal system with disease diagnostic methods and uses of herbals.
- 17. Write an account on chemical constituents and pharmacological uses of *Piper nigrum* and *Strychnos nux-vomica*.
- 18. Enlist the adulterants for crude drugs and add note on its methods of detection.
- 19. Describe the cultivation methods for *Acorus calamus*.
- 20. Explain the procedure for estimation of Vitamin C from plant sources.



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# **Elective - FOOD PROCESSING TECHNOLOGY**

### (CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

**Part A**  $(10 \times 2 = 20)$ 

- 1. What is nutrition?
- 2. Define Emulsions.
- 3. Define Dietary fiber.
- 4. Flavoring substance of food
- 5. Drug administration
- 6. Hospital diets
- 7. Irradiation system of food processing
- 8. Define freezing
- 9. Mention any two food laws
- 10. Food safety

Part B  $(5 \times 5 = 25)$ 

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

11. (a) Write brief notes on energy utilization in cell and energy balance.

Or

- (b) Write short notes on energy value of food and its determination.
- 12. (a) Describe the nutrient supplement of food production.

Or

- (b) Explain the role of antioxidants in food processing
- 13. (a) Describe the biotransformation and excretion of drugs.

Or

- (b) List out the objectives of diet theraphy.
- 14. (a) Write the importance of membrane separation equipment in food processing.

Or

- (b) Describe the steps involved in food packaging.
- 15. (a) Write brief notes on documentation and record maintanence of food production.

Or

(b) Write short notes AGMARK and BIS.

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**Part C**  $(3 \times 10 = 30)$ 

Answer any **three** questions.

- 16. Give an account on physiochemical properties and principles of food.
- 17. Describe the types and importance of food adulteration.
- 18. Write briefly explain the mechanism of drugs action.
- 19. Discuss in detailed about the chemical principles in food processing.
- 20. Write an essay on food safety and standard acts.

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