

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc Degree Examination, November 2025

BOT3CJ201 – Plant Embryology, Palynology &amp; Evolution

(FYUGP 2024 Admission onwards )

Time: 2 hours

Max. Marks : 70

**PART – A**

All questions can be attended.  
Each question carries Three mark.  
Ceiling -24 Marks

|    |                                                                     | COs | Knowledge Level (KL) | Marks |
|----|---------------------------------------------------------------------|-----|----------------------|-------|
| 1  | Write down the contributions of Indian Embryologists                | CO1 | U                    | 3     |
| 2  | Write the major differences between Apomixis and Parthenocarpy.     | CO1 | AP                   | 3     |
| 3  | Evaluate the importance of Double fertilization                     | CO1 | E                    | 3     |
| 4  | What are Ubisch bodies?                                             | CO2 | R                    | 3     |
| 5  | What you mean by hermogegathic mechanism?                           | CO2 | R                    | 3     |
| 6  | Define Copropalynology.                                             | CO2 | U                    | 3     |
| 7  | What are Prions?                                                    | CO3 | U                    | 3     |
| 8  | What are Vestigial structures? Mention its significance.            | CO3 | U                    | 3     |
| 9  | Write any one example for the morphological evidences of evolution. | CO3 | U                    | 3     |
| 10 | What is Gene Mutation? Mention its significance in evolution.       | CO4 | U                    | 3     |

**PART – B**

All questions can be attended.  
Each question carries six marks.  
Ceiling -36 Marks

|    |                                                              | COs | Knowledge Level (KL) | Marks |
|----|--------------------------------------------------------------|-----|----------------------|-------|
| 11 | Write a note on Polyembryony.                                | CO1 | U                    | 6     |
| 12 | Explain the mechanism of seed dispersal.                     | CO1 | U                    | 6     |
| 13 | What is an embryo? With diagram explain Monocot embryo.      | CO1 | R                    | 6     |
| 14 | What are the scopes of palynology in Forensic Science.       | CO2 | AP                   | 6     |
| 15 | Explain spore wall sculpturing.                              | CO2 | R                    | 6     |
| 16 | How prokaryotic cell evolved?                                | CO3 | U                    | 6     |
| 17 | Explain the significance of Darwinism.                       | CO3 | AP                   | 6     |
| 18 | Define selection? What are the driving forces for selection? | CO4 | AP                   | 6     |

**PART - C**

Answer any *one* questions.  
Each question carries **Ten** marks.

|    |                                                                                 | COs | Knowledge Level(KL) | Marks |
|----|---------------------------------------------------------------------------------|-----|---------------------|-------|
| 19 | Explain genetic constancy and creation of variability.                          | CO4 | U                   | 10    |
| 20 | Citing suitable examples draw and explain the types of Ovules you have studied. | CO1 | U                   | 10    |

**1 x 10 = 10 Marks**

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE  
**Third Semester B.Sc Degree Examination, November 2025**  
**BOT3CJ202 – Plant Anatomy & Analytical techniques**  
 (FYUGP 2024 Admission onwards )

Time: 2 hours

Max. Marks : 70

**PART – A**  
**All questions can be attended.**  
**Each question carries Three mark.**  
**Ceiling -24 Marks**

| Q. No. | Question                                                                                           | COs | Knowledge Level (KL) | Marks |
|--------|----------------------------------------------------------------------------------------------------|-----|----------------------|-------|
| 1      | Differentiate between parenchyma and collenchyma.                                                  | 1   | U                    | 3     |
| 2      | Enumerate the applications of mass spectroscopy.                                                   | 3   | Ap                   | 3     |
| 3      | Discuss the diversity of stomatal types in plants.                                                 | 1   | U                    | 3     |
| 4      | Explain differential centrifugation?                                                               | 2   | U                    | 3     |
| 5      | Define a knot in wood? Explain how it affects wood quality.                                        | 1   | U                    | 3     |
| 6      | Explain the principle behind chromatography?                                                       | 2   | U                    | 3     |
| 7      | Expand ppm. How is it calculated for a solution?                                                   | 2   | U                    | 3     |
| 8      | Name any three types of non-living inclusions found in plant cells and state one function of each. | 1   | U                    | 3     |
| 9      | Define molarity and normality with examples.                                                       | 2   | U                    | 3     |
| 10     | List any three anatomical adaptations in Xerophytes that help them survive arid environments.      | 1   | U                    | 3     |

**PART – B**  
**All questions can be attended.**  
**Each question carries six marks.**  
**Ceiling -36 Marks**

| Q. No. | Question                                                                  | COs | Knowledge Level (KL) | Marks |
|--------|---------------------------------------------------------------------------|-----|----------------------|-------|
| 11     | What are complex tissues? State the differences between xylem and phloem. | 1   | U                    | 6     |
| 12     | Discuss the role of fluorescence spectroscopy in botanical research.      | 3   | U                    | 6     |



|    |                                                                                                        |   |    |   |
|----|--------------------------------------------------------------------------------------------------------|---|----|---|
| 13 | Analyse the types of cambial abnormalities found in anomalous secondary growth with suitable examples. | 4 | An | 6 |
| 14 | Classify chromatography and explain any two methods in detail.                                         | 2 | U  | 6 |
| 15 | List the characteristics of wood. Explain its different types.                                         | 1 | U  | 6 |
| 16 | Write notes on preparation and use of buffers in biological studies.                                   | 2 | U  | 6 |
| 17 | Explain the structure of shoot apex in plants with diagram.                                            | 1 | U  | 6 |
| 18 | Explain ultracentrifugation with its application in analytical studies.                                | 2 | U  | 6 |

### PART - C

Answer any *one* questions.  
Each question carries Ten marks.

| Q. No. | Question                                                                                                    |  | COs | Knowledge Level (KL) | Marks |
|--------|-------------------------------------------------------------------------------------------------------------|--|-----|----------------------|-------|
| 19     | Briefly explain the secondary thickening in dicot stem with diagrams.                                       |  | 1   | U                    | 10    |
| 20     | Explain the principle and types of electron microscopes. Evaluate their roles in various fields of science. |  | 5   | E                    | 10    |

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(Pages : 2)

Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc Degree Examination, November 2025

BOT3MN203 – Ethnobotany

(FYUGP 2024 Admission onwards )

Time: 2 hours

Max. Marks : 70

**PART – A**All questions can be attended. Each question carries *Three* mark.**Ceiling -24 Marks**

|    |                                                                                                               | COs | Knowledge Level (KL) | Marks |
|----|---------------------------------------------------------------------------------------------------------------|-----|----------------------|-------|
| 1  | How do ethno botanical studies remain significant in present scenario?                                        | CO1 | U                    | 3     |
| 2  | What are the reliable methods for authenticating the ethnobotanical plants chosen for study?                  | CO2 | U                    | 3     |
| 3  | Give any three examples of edible plants with ethnobotanical significance?                                    | CO2 | F                    | 3     |
| 4  | In what ways does forest management contribute to the protection of ethnobotanically important plant species? | CO4 | An                   | 3     |
| 5  | Justify the role of ethnobotany in protecting the cultural and biological heritage of ethnic groups           | CO3 | E                    | 3     |
| 6  | Define ethnopharmacology and explain its scope.                                                               | CO2 | C                    | 3     |
| 7  | Explain the importance of ethnopharmacology in the process of drug discovery.                                 | CO2 | An                   | 3     |
| 8  | Give an account of how traditional medicine has influenced modern drug discovery                              | CO4 | E                    | 3     |
| 9  | Explain the ethnobotanical importance of <i>Vitex negundo</i> and <i>Gloriosa superba</i> plants.             | CO3 | An                   | 3     |
| 10 | Write about the natural products, that are applied to treat various skin diseases, and how are they used?     | CO2 | Ap                   | 3     |

**PART – B**All questions can be attended. Each question carries *Six* marks.**Ceiling -36 Marks**

|    |                                                                                                                                                      | COs | Knowledge Level (KL) | Marks |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------|-------|
| 11 | What are the different methods used to study ethnobotany, and how do they contribute to understanding of the relationship between people and plants? | CO1 | U                    | 6     |
| 12 | Briefly describe six tribal communities in Kerala, and also highlight their unique cultural characteristics.                                         | CO3 | C                    | 6     |
| 13 | What are endangered taxa, and what methods are used to conserve them?                                                                                | CO4 | An                   | 6     |
| 14 | How can ethnobotany contribute to the concept of sharing wealth and promoting equitable benefit-sharing among communities?                           | CO3 | E                    | 6     |
| 15 | What are the major challenges in ensuring the quality, safety and efficacy of herbal medicines?                                                      | CO2 | An                   | 6     |
| 16 | Write about the significance of ethnopharmacological studies in drug discovery.                                                                      | CO2 | An                   | 6     |
| 17 | Explain any case study where traditional medicine led to the development of a modern pharmaceutical drug?                                            | CO3 | Ap                   | 6     |
| 18 | Discuss the application of natural products in the treatment of some common diseases.                                                                | CO3 | E                    | 6     |

**PART - C**Answer any *One* question. Each question carries *Ten* marks.

|    |                                                                                                                         | COs | Knowledge Level (KL) | Marks |
|----|-------------------------------------------------------------------------------------------------------------------------|-----|----------------------|-------|
| 19 | Discuss the relevance of ethnobotanical studies in the present context and their impact on modern science and medicine. | CO2 | E                    | 10    |
| 20 | Write an account of the contributions of various prominent authors in the field of ethnobotanical research.             | CO4 | E                    | 10    |

**1 x 10 = 10 Marks**