

IB5N25022

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany Degree Examination, November 2025

BBT5B06 - Gymnosperms, Paleobotany, Phytogeography & Evolution

(2022 Admission onwards)

Time: 2 hours

Max. Marks : 60

SECTION A

(Answer all questions, each question carries 2 marks. Ceiling: 20 Marks)

1. How lateral conduction in *Cycas* leaf takes place?
2. Write a short note on extra stelar secondary growth in *Pinus* stem?
3. What is Pycnoxylic wood? Write its uses.
4. Explain male flower in *Gnetum*?
5. What are Petrifications? Mention its significance.
6. What is Geological time scale? Mention its significance.
7. Who is the father of Indian Palaeobotany? Write any one of his contributions.
8. How polymerization reactions became an inevitable part in the evolution of life?
9. What are analogous structures? Cite one example.
10. Write a note on Plate tectonics.
11. Define Amber?
12. Mention the significance of Chlorophyll in early evolution?

SECTION B

(Answer all questions, each question carries 5 marks. Ceiling: 30 Marks)

13. Why endosperm of Gymnosperm is haploid?
14. Explain the female reproductive structure of *Cycas*.
15. Compare the male cone of *Pinus* and *Gnetum*.
16. What is Endemism? Explain the theories put forwarded to explain endemism.
17. Explain the features of *Lepidodendron*.
18. Explain Genetic drift?
19. Explain Neo-Lamarckism.

SECTION C

(Answer any one question, each question carries 10 marks. 1 x 10 = 10 Marks)

20. With illustrations, explain the life history of *Gnetum*.
21. Define Speciation. Explain the modes of Speciation.

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany Degree Examination, November 2025

BBT5B07 - Angiosperm Morphology & Systematics

(2022 Admission onwards)

Time: 2 hours

Max. Marks : 60

SECTION A**(Answer all questions, each question carries 2 marks. Ceiling: 20 Marks)**

1. Differentiate between a simple leaf and a compound leaf.
2. What is a Thyrsus inflorescence? Give an example.
3. Distinguish between albuminous and exalbuminous seeds.
4. What is a pome fruit? Give an example.
5. List two objectives of plant systematics.
6. What is a Paratype? Explain how it differs from Holotype.
7. Briefly describe the concept of a taxonomic character.
8. Mention two contributions of E.K. Janaki Ammal.
9. Write on the economic importance of plants belonging to the family Fabaceae.
10. What are revisions and monographs in the context of taxonomic literature?
11. Differentiate between macro and micromorphology in taxonomy.
12. Briefly explain the concept of Molecular Taxonomy.

SECTION B**(Answer all questions, each question carries 5 marks. Ceiling: 30 Marks)**

13. Describe the detailed structure of a typical flower, highlighting the arrangement and relative position of floral parts.
14. Explain the adaptations for fruit and seed dispersal by animals. Cite suitable examples.
15. Discuss Bentham and Hooker's system of classification, mentioning its key features.
16. Describe the floral features of the family Liliaceae.
17. Elaborate on the importance of Botanic Gardens for plant conservation and research.
18. Explain the salient features of Orchidaceae.
19. Write a comparative account of floral features of subfamilies of Fabaceae.

SECTION C

(Answer any one question, each question carries 10 marks. $1 \times 10 = 10$ Marks)

20. Write an essay on the features of different inflorescences, citing suitable examples for each.
21. Write an essay on modern trends in taxonomy, specifically focusing on numerical taxonomy, molecular taxonomy, and phylogenetics.

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fifth Semester B.Sc Botany Degree Examination, November 2025
BBT5B08 - Tissue culture, Horticulture, Economic Botany, Ethnobotany
(2022 Admission onwards)

Time: 2 hours

Max. Marks : 60

SECTION A

(Answer all the questions, each question carries 2 marks. Ceiling : 20 marks)

1. Define totipotency.
2. What is haploid culture? Explain its significance.
3. What is a Bonsai? What is the principle of making Bonsais?
4. Give the botanical names and families of two important spices.
5. What are the different branches of horticulture?
6. What is the principle of working of a Laminar Air Flow chamber?
7. What is a callus?
8. Define ethnobotany.
9. Write a note on inoculation and its importance?
10. Name two garden tools and mention their functions in gardening.
11. What are biopesticides? Give an example.
12. What are the different types of outdoor gardens?

SECTION B

(Answer all the questions, each question carries 5 marks. Ceiling : 30 marks)

13. Explain the role of plant growth regulators in tissue culture.
14. Discuss the importance and principles of landscape gardening.
15. Describe the aseptic methods used in tissue culture.
16. Explain the role of medicinal plants in traditional healthcare systems, with examples.
17. Give an account of methods employed in protection of horticultural crops.
18. Write a note on the medicinally important plants, with emphasis on their binomial names, families and morphology of their economically useful part.
19. Briefly describe the components of tissue culture media, with a note on their relevance.

SECTION C

(Answer any one question, each question carries 10 marks. 1 x 10 = 10 marks)

20. Describe the applications of the various methods employed in plant tissue culture.
21. Describe the cultivation methods and importance of mushrooms, with special reference to Oyster mushrooms.

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany Degree Examination, November 2025

BBT5B09 - Cell biology & Biochemistry

(2022 Admission onwards)

Time: 2 hours

Max. Marks : 60

SECTION A**(Answer all questions. Each question carries 2 marks. Ceiling 20 marks)**

1. Differentiate between prokaryotic and eukaryotic cells.
2. Illustrate the structure of Mitochondria.
3. Mention the functions of Chloroplast.
4. Describe Zwitter ion.
5. Enlist various stages of Meiosis I
6. List out the bonds stabilizing the tertiary structure of proteins.
7. Enumerate the events in Telophase stage of mitosis.
8. Describe co-enzyme. Provide an example.
9. Explain chromosome puffs.
10. Differentiate between peptides and proteins.
11. Explain Activation energy in enzyme action.
12. Differentiate between saturated & unsaturated fatty acids.

SECTION B**(Answer all questions. Each question carries 5 marks. Ceiling 30 marks)**

13. Explain primary and secondary structures of protein along with examples.
14. Define Haploidy and Aneuploidy. Mention their meiotic behaviour and significance.
15. Describe the structure and significance of Lamp brush chromosome.
16. Explain the physiological and ecological importance of secondary metabolites.
17. Classify and illustrate chromosomes on the basis of the position of centromere.
18. Differentiate between simple and complex lipids along with examples.
19. Explain the structure and functions of Ribosomes. How are they different in prokaryotes and eukaryotes?

SECTION C

(Answer any one. Each question carries 10 marks. 1 x 10 = 10)

20. Explain various stages of Mitosis with the help of appropriate diagrams. Also mention the significance of Mitosis.
21. Classify carbohydrates based on their structure along with examples. Add a note on the biological functions of carbohydrates.

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fifth Semester B.Sc Botany Degree Examination, November 2025
(Open Course)
BBT5D02 - Applied Botany
(2022 Admission onwards)

Time: 2 hours

Max. Marks : 60

Part A

All questions can be attended. Each question carries *Two* mark. **Ceiling -20 Marks**

1. What do you mean by Seed dormancy?
2. Write any advantages of somatic embryogenesis.
3. Write an account on shoot tip culture.
4. Name the different types of soils.
5. Comment on potting mixture.
6. What are biopesticides? Write any suitable example.
7. Comment on any advantages of using vermicompost.
8. What are Biofertilizers? Cite any example.
9. Discuss any significant role of Blue green algae.
10. Mention the importance of Orchids in flower markets.
11. Write the binomial, family and useful part of two cereals.
12. Write the binomial, family and useful part of two nonalcoholic beverages.

Part B

All questions can be attended. Each question carries *Five* mark. **Ceiling -30 Marks**

13. Explain micropropagation with special emphasis on meristem culture.
14. Explain the types and method of application of organic fertilizers.
15. Discuss the merits and demerits of using chemical fertilizers.
16. Explain the techniques involved in Bonsai making.
17. Explain different steps involved in Oyster mushroom cultivation.
18. Write an account an association between *Rhizobium* with Leguminous plants.
19. Write the binomial, family and useful part of different spices and explain their uses.

Part C

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

20. Write an essay on different types of vegetative propagation methods.
21. Explain seed propagation techniques with special emphasis on seed treatments and methods to overcome seed dormancy.