

FIRST SEMESTER (CBCSS-UG) DEGREE EXAMINATION, NOVEMBER 2021

Botany

BOT 1C 01—ANGIOSPERMIC ANATOMY AND MICRO TECHNIQUE

(2019–2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

*Answer all questions.**Each question carries 2 marks–Ceiling 20 marks.*

1. Define collateral vascular bundle.
2. What is meant by Histogen theory ?
3. What is cambial ring ?
4. What is meant by lenticel ?
5. Define ray initial
6. What is diffuse porous wood ?
7. Define storied cambium.
8. Describe Parenchyma.
9. Describe Hydathodes.
10. Define Farmers fluid.
11. Write a note on acetocarmine.
12. What is meant by clearing ?

(20 marks)

Section B

*Answer all questions.**Each question carries 5 marks - Ceiling : 30 marks.*

13. Write a note on glandular tissues.
14. Explain shoot apex.
15. Describe digestive glands in *Nepenthes*.
16. Write an account on normal secondary thickening in *Vernonia* stem.

Turn over

17. Explain growth rings.
18. Write an account on Killing and fixing agents.
19. Give an account on Microtome.

(30 marks)

Section C

*Answer any one question.
The question carries 10 marks.*

20. Write an account on structure and functions of complex tissues.
21. Describe electron microscope and write a notes on its applications.

(1 × 10 = 10 marks)

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FIRST SEMESTER (CBCSS-UG) DEGREE EXAMINATION, NOVEMBER 2021

Botany

BOT 1B 01—ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND PALYNOLOGY

(2019–2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A*Answer all questions.**Each question carries 2 marks–Ceiling 20 marks.*

1. Write a note on Aleurone grains.
2. What is meant by periderm ?
3. Define Nectaries.
4. What is lysigenous ducts ?
5. What is Apical cell theory ?
6. Define Druses.
7. What is meant by vascular rays ?
8. Differentiate articulated and non-articulated laticifers.
9. Describe embryosac.
10. Define pollen wall.
11. What is meant by double fertilization ?
12. Write a note on pollen allergy.

Section B*Answer all questions.**Each question carries 5 marks – Ceiling: 30 marks.*

13. Write an account on secretory tissues.
14. Explain anomalous secondary growth in *Bignonia*.
15. Give an account on meristematic tissues.
16. Explain stelar secondary growth.

Turn over

17. Write an account on microsporogenesis.
18. Explain the embryo structure of *Cypselia*.
19. Write an account on development of female gametophyte.

Section C

*Answer any one question.
The question carries 10 marks.*

20. Write an account on complex tissues with detailed structure and function.
21. Explain pollination and give an account on barriers of fertilization.

(1 × 10 = 10 marks)

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**FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Botany

BOT 1C 01—ANGIOSPERMIC ANATOMY AND MICRO TECHNIQUE

(2021 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

Answer at least eight questions.

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

1. Write an account of tunica- corpus theory.
2. Some fruits are gritty. Why ?
3. Describe a bicollateral vascular bundle.
4. What is Rhizodermis ? Describe the structure.
5. Describe the epidermis of an isobilateral leaf.
6. What are Lenticels ? What is its function ?
7. What is Phellogen ? Comment on its activity.
8. Why does secondary growth takes place in dicots while it does not occur in monocots ?
9. What functions do medullary rays serve in the stem ?
10. What is the composition of Farmer's fluid ? Comment on its use in microtechnique.
11. What is the purpose of dehydration ? Name a reagent used for this.
12. Write a brief account on microtome.

(8 × 3 = 24 marks)

Turn over

Section B

*Answer at least **five** questions.*

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. With the help of suitable diagrams, describe the structure and functions of xylem components.
14. State the differences between dicot and monocot roots.
15. Describe the internal structure of a monocot stem.
16. Explain the structure and functions of cambium.
17. Differentiate between a) Sap wood and heart wood ; and b) Ring porous wood and diffuse porous wood.
18. What are Stains ? Write an account on the preparation and uses of stains.
19. Explain the principle of an electron microscope and write about different types of electron microscopes.

(5 × 5 = 25 marks)

Section C

*Answer any **one** question.*

The question carries 11 marks.

20. What are secretory tissues ? Describe the various types of secretory tissues you have studied.
21. Explain secondary growth in a dicot root with the help of suitable diagrams.

(1 × 11 = 11 marks)

**FIRST SEMESTER (CBCSS-UG) DEGREE EXAMINATION
NOVEMBER 2021**

Botany

BOT 1B 01—ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND PALYNOLOGY

(2021 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

*Answer atleast **eight** questions.*

Each question carries 3 marks.

All questions can be attended.

Overall ceiling 24.

1. Explain Korper-Karper theory.
2. What is callose tissue ? What is its function ?
3. In woody plants, the central region appears dark. Why is it so ?
4. Mention the characteristic features of meristems.
5. What are tyloses ? What is its anatomical role in plants ?
6. Define palynology.
7. In grasses, the leaf surface is rough. Explain the reason.
8. List out the name of a great Indian embryologist and his/her major contribution to the field of embryology.
9. Bring out the structure of pollen wall.
10. Explain promeristem.
11. Distinguish ring porous wood from diffuse porous wood of angiosperms.
12. Describe the structure of a monocot embryo.

(8 × 3 = 24 marks)

Turn over

Section B

*Answer atleast **five** questions.*

Each question carries 5 marks.

All questions can be attended.

Overall ceiling 25.

13. What are annual rings ? How are they formed ?
14. Bring out the organization of root apices in dicots.
15. Explain the economic and taxonomic importance of palynology.
16. With suitable diagrams, explain the anatomical features of laticiferous tissue. Add notes on the economically important latex producing plants.
17. Explain the major events that occurred during megasporogenesis . Add notes on triple fusion.
18. Write notes on shape of pollen grains and apertural morphoforms.
19. With suitable diagrams, explain the structure, occurrence and functions of simple tissues you have studied.

(5 × 5 = 25 marks)

Section C

*Answer any **one** question.*

Each question carries 11 marks.

20. With the help of labelled diagrams, describe the anomalous secondary growth in *Dracaena*.
21. Describe monosporic type of embryosac development in *Polygonum* with suitable diagrams.

(1 × 11 = 11 marks)

**FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Botany

BOT 1C 01—ANGIOSPERMIC ANATOMY AND MICRO TECHNIQUE

(2016—2018 Admissions)

Time : Three Hours

Maximum : 64 Marks

Part A

Answer all questions.

Each question carries 1 mark.

1. Boerhaavia stem shows which type of secondary thickening ?
2. The presence of Casperian strips is a characteristic feature of _____.
3. Honey secreting glands in plants are called _____.
4. The Tunica- Corpus concept was proposed by _____.
5. Radial Vascular bundle is found in _____.
6. The Secretory tissue responsible for exudation of liquid water in leaves in the morning in selected plants is _____.
7. Companion cells are component of _____.
8. Raphides are consists of _____ type of crystals.
9. Age determination of trees by counting annual rings are called _____.
10. Name a stain used to study cell division ?

(10 × 1 = 10 marks)

Part B

Answer any seven questions.

Each question carries 2 marks.

11. Give the preparation and uses of Safranin stain.
12. How does a vascular bundle in the stems of dicots differ from that in monocots ?
13. List the characteristics of meristems.
14. Differentiate between heart wood and sap wood ?

Turn over

15. What are bulliform cells? Give its significance.
16. Give an account on laticiferous tissues ?
17. Point out the features of monocot leaf.
18. Differentiate between parenchyma and collenchymas ?
19. What is a quiescent centre ?
20. What are Tyloses ?

(7 × 2 = 14 marks)

Part C

Answer any six of the following.

Each question carries 4 marks.

21. Explain Different Types of vascular bundles with examples and suitable diagram.
22. What are microtomes? Give its function and types.
23. Describe the process of extra stelar secondary thickening ?
24. With the help of diagram explain the primary structure of monocot root ?
25. Write briefly on different types of meristems based on origin and position ?
26. Give an account on cambium and its types ?
27. What are the principles and advantages of electron microscope ?
28. Write notes on various components of xylem. Give its function ?

(6 × 4 = 24 marks)

Part-D

Answer any two of the following.

Each question carries 8 marks.

29. Classify permanent tissues and explain with suitable diagrams ?
30. With the help of suitable diagram, explain secondary growth in dicot stem ?
31. With the help of suitable illustrations explain the primary structure of dicot root ? Add a note on t secondary thickening in dicot root.

(2 × 8 = 16 marks)

**FIRST SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Botany

BOT 1B 01—ANGIOSPERM ANATOMY

(2016—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

Answer all questions.

Each question carries 1 mark.

I. Fill in the blanks :

- 1 Vascular bundle with xylem surrounding phloem are called _____.
- 2 Bulliform cells are found in _____.
- 3 The living tissue found in xylem is _____.
- 4 Raphides are formed of _____ crystals.
- 5 Protoxylem lacunae are commonly found in the vascular bundles of _____.
- 6 The cambial strip formed between the vascular bundles during secondary growth is called _____.
- 7 Bone shaped sclerids are called _____.
- 8 _____ is the chief component of secondary cell wall in plants.
- 9 Histogen theory was proposed by _____.
- 10 _____ is a zone of inactive cells found in root apical meristem.

(10 × 1 = 10 marks)

Part B (Short Answer Questions)

Answer all questions.

Each question carries 2 marks.

- 11 What are Pits ? How bordered pits differ from simple pits ?
- 12 Give an account on Tunica-carpus theory.
- 13 Explain different types of collenchyma.
- 14 What are trilacunar nodes ? Give an example for plants with trilacunar nodes.

Turn over

- 15 Distinguish between heart wood and sap wood.
- 16 What are Lenticels ? Mention their function.
- 17 What are Druses ? How do they differ from cystoliths ?
- 18 Distinguish between fusiform initials and ray initials.
- 19 What are Sclereids ? How do they differ from fibres ?
- 20 What are growth rings ? How they are formed ?

(10 × 2 = 20 marks)

Part C (Short Essay Questions)

Answer any six questions.

Each question carries 5 marks.

- 21 What are Meristems ? Give a brief account on the classification based on position in plant body and time of origin.
- 22 Give an account on various excretory products in plants.
- 23 Explain extra stelar secondary growth in plants.
- 24 Explain the structure of Phloem. Add a note on the functions of various tissues found in phloem.
- 25 Explain the structure of plasmodesmata. Comment on their functions.
- 26 Give a detailed account on various reserve food materials found in plants.
- 27 Mention the properties of parenchyma tissues. Explain different kind of parenchyma found in plants.
- 28 Explain the structure of monocot leaf with diagrams.

(6 × 5 = 30 marks)

Part D (Essay)

Answer any two questions.

Each question carries 10 marks.

- 29 Give a detailed account on various secretory tissues found in plants.
- 30 Explain the structure of cell wall with diagrams. Add a short note on its growth.
- 31 Describe anomalous secondary growth in *Boerhaavia* stem with neat labelled diagram.

(2 × 10 = 20 marks)

**FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020**

Botany

BOT 1C 01—ANGIOSPERM ANATOMY AND MICROTECHNIQUE

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

*Answer at least **eight** questions.*

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

1. Explain Histogen theory.
2. Write an account on oil glands.
3. Describe concentric vascular bundles, citing examples.
4. Describe the structure and functions of endodermis.
5. Explain mesophyll tissue in a dicot leaf.
6. What are growth rings ?
7. What is interfascicular cambium ? What is its role ?
8. What are tyloses ?
9. Distinguish fusiform initials and ray initials.
10. What is the purpose of clearing in microtechnique ? Name a reagent used for this.
11. What is the composition of FAA ? What is its use ?
12. Write about the preparation and uses of acetocarmine.

(8 × 3 = 24 marks)

Section B

*Answer at least **five** questions.*

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. With the help of suitable diagrams, describe the structure and functions of phloem elements.
14. Compare the internal structure of monocot and dicot stem.
15. Describe the structure of a monocot root with help of a diagram.
16. What are the changes taking place in the stelar region in a dicot root during growth in thickness?
17. Explain the structure of periderm and its formation.
18. What is the purpose of dehydration and clearing? Name the reagents used for these purposes.
19. Write an account on microtome and serial sectioning. Comment on the significance.

(5 × 5 = 25 marks)

Section C

*Answer any **one** question.*

The question carries 11 marks.

20. Bring out the structure and functions of different simple tissues.
21. Describe anomalous secondary growth in *Boerhaavia* stem. Draw suitable diagrams.

(1 × 11 = 11 marks)

**FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020**

Botany

BOT 1B 01—ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND PALYNOLOGY

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

*Answer at least **eight** questions.*

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

1. List out the functions of collenchyma.
2. Differentiate between sclereids and fibres.
3. Write notes on quiescent centre.
4. Explain histogen theory with regard to root apices.
5. Briefly bring out the contributions of P. Maheswari in the field of embryology.
6. Give an account of pollen morphology.
7. Extra xylary fibres have great economic importance. Discuss.
8. What are the functions of tapetum ?
9. What is an endosperm ? What is its function ?
10. Bring out any four differences between a dicot and a monocot leaf.
11. What are aleurone grains ? Give examples.
12. What are hydathodes ? What is its structure ?

(8 × 3 = 24 marks)

Section B

*Answer at least **five** questions.*

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. Give an account of the structure of cell wall in plants. Also add notes on cell wall materials found in plants.
14. Bring out the classification of meristems based on origin, position and plane of division.

Turn over

15. Explain the different types of endosperm found in angiosperms.
16. With suitable examples, specify how palynology could solve taxonomic disputes in angiosperms.
17. With suitable diagrams, explain the structure, origin and functions of complex tissues in plants.
18. With suitable diagrams, explain the structure of anther. Also add notes on dehiscence of anther.
19. Give an account of extrastelar secondary growth found in angiosperms with suitable diagrams.

(5 × 5 = 25 marks)

Section C

Answer any one question.

The question carries 11 marks.

20. With suitable diagrams, explain the various types of embryosacs found in angiosperms.
21. Explain the anomalous secondary growth found in *Boerhaavia* with suitable diagrams.

(1 × 11 = 11 marks)

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS—UG)

Botany

BOT 1C 01—ANGIOSPERMIC ANATOMY AND MICRO TECHNIQUE

Time : Three Hours

Maximum : 64 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

1. Bicollateral vascular bundle is common in _____ angiosperm family.
2. The endarch vascular bundles observed in _____.
3. Honey secreting glands in plants are called _____.
4. The Histogen concept was proposed by _____.
5. Anomalous secondary thickening is found in _____.
6. The microscopic opening responsible for gaseous exchange seen in leaves is called _____.
7. Tracheids are component of _____.
8. Cystolith consists of _____ type of crystals.
9. Age determination of trees by counting annual rings are called _____.
10. Acetocarmine stain used to study _____.

(10 × 1 = 10 marks)

Part B

*Answer any seven questions.
Each question carries 2 marks.*

11. Give the preparation and uses of Safranin stain.
12. How can you differentiate a monocot stem from dicot stem anatomically?
13. List the characteristics of root apex.
14. Differentiate between ring porous wood and diffuse porous wood.
15. What are bulliform cells? Give its significance.
16. Give an account on nectaries?

Turn over

17. Point out the features of dicot leaf.
18. Differentiate between collenchyma and sclerenchyma.
19. What is a quiescent centre ?
20. What are casparian strips ?

(7 × 2 = 14 marks)

Part C

Answer any **six** of the following.

Each question carries 4 marks.

21. Explain Different Types of vascular bundles with examples and suitable diagram.
22. What are microtomes ? Give its function and types.
23. Describe the process of secondary thickening in dicot stem.
24. With the help of diagram explain the primary structure of dicot root.
25. Write briefly on different types of meristems based on origin and position.
26. Give an account on cambium and its types.
27. Give an account on electron microscope.
28. Write notes on various components of phloem. Give its function ?

(6 × 4 = 24 marks)

Part D

Answer any **two** of the following.

Each question carries 8 marks.

29. Discuss the various permanent tissues and explain with suitable diagrams ?
30. With the help of suitable diagram, explain anomalous secondary growth in Boerhaavia ?
31. With suitable illustrations explain the anatomy of dicot and monocot leaf.

(2 × 8 = 16 marks)

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS—UG)

Botany

BOT 1B 01—ANGIOSPERM ANATOMY

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

I. Fill in the blanks :

- 1 Perforation plates are found in _____.
- 2 Channels that connect adjacent plant cells are called _____.
- 3 Grape bunch like crystals found in some plant cells are _____.
- 4 Dark coloured central portion of wood is called _____.
- 5 A living cell that is devoid of nucleus at maturity is _____.
- 6 The histogen that form the epidermis is _____.
- 7 Aerating structures present in the bark of trees are called _____.
- 8 Vascular bundles with cambium in between xylem and phloem are called _____.
- 9 Korper-Kappe theory was proposed by _____.
- 10 Calcium and Magnesium pectate are abundantly found in _____.

(10 × 1 = 10 marks)

Part B (Short Answer Questions)

*Answer all questions.
Each question carries 2 marks.*

- 11 What are Pits ? Explain the types.
- 12 Mention the important features of parenchyma.
- 13 Distinguish between amphivasal and ampicribal vascular bundles.

Turn over

- 14 Mention any *four* differences between dicot and monocot vascular bundles.
- 15 Distinguish between anomocytic and anisocytic stomata.
- 16 What are bulliform cells? Mention their function.
- 17 Comment on multilacunar nodes. Give an example.
- 18 How growth rings are formed in plants?
- 19 What are casparian strips? Comment on its function.
- 20 What are Aerenchyma? Where they are found?

(10 × 2 = 20 marks)

Part C (Short Essay Questions)

Answer any **six** questions.

Each question carries 5 marks.

- 21 Explain the structure of primary cell wall in plants. Add a note on the growth of cell wall.
- 22 Give an account of the organization of shoot apex citing various theories.
- 23 Explain the structure of monocot stem. How it differs from dicot stem.
- 24 Briefly explain the anomalous secondary growth in *Boerhaavia*.
- 25 Discuss the structure of stomata. Give a classification of stomata you have studied.
- 26 Explain extrastelar secondary growth in dicot stem.
- 27 Explain the structure of xylem with the help of diagrams.
- 28 Give an account of various secretory tissues found in plants.

(6 × 5 = 30 marks)

Part D (Essay Questions)

Answer any **two** questions.

Each question carries 10 marks.

- 29 Describe various food reserves found in plant cells. Add a note on various secretory products found in plants.
- 30 Discuss the properties of meristematic tissues. Give a detailed account of their classification.
- 31 Explain anomalous secondary growth in *Dracaena* stem with diagrams.

(2 × 10 = 20 marks)