

Reg. No. :

Name :

First Semester B.Sc. Degree Examination, March 2023

First Degree Programme under CBCSS

Botany

Core Course

**BO 1141 : ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND
PALYNOLOGY**

(2019-2021 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in a word **one** or **two** sentences. Each question carries **1** mark.

1. The thickening on the Radial wall of Endodermis is known as _____?
2. Name the parenchyma cells having chloroplast.
3. Calcium oxalate crystal in Araceae responsible for Itching is known as _____?
4. Which is the Living mechanical tissue?
5. The cement material sticking the plant cells together is _____?
6. What is interfascicular cambium?
7. What are the components of Periderm.

8. What is tapetum?
9. What is stomium?
10. Define obturator.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks. (Answer not to exceed One paragraph)

11. List the different kinds of secondary wall thickening in Tracheids.
12. What are Passage cells?
13. Write a short note on Ubisch bodies.
14. Describe NPC system?
15. Explain Korper Kappe theory.
16. Differentiate storied and non storied cambium.
17. What is Endothelium.
18. Explain Epistase and Hypostase.
19. Explain triple fusion?
20. Describe the structure of Primary Cell wall.
21. Differentiate between protoxylem and Metaxylem.
22. Write an example for the use of Anatomy in Plant Taxonomy.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks. (Answer not to exceed **120** words)

23. What are Synergids, Describe with illustrations.
24. Outline the Development of Tetrasporic Embryo sac with an Example.
25. Illustrate the structure of Dicot embryo.
26. Describe the structure of dicot root with illustration.
27. What is Double fertilisation? Explain its event in detail.
28. Briefly outline the Major contributions made by P.Maheswary to the field of Embryology.
29. What are the different types of stomata seen in dicot plants?
30. Describe the structure of Bicollateral Vascular Bundle.
31. Differentiate between fusiform and ray initials.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks.

32. Critically evaluate the various theories that you have studied on organisation of apical meristem.
33. Elaborate the different types of complex permanent tissues.
34. What are the different types of Endosperms, Comment on endosperm haustoria, Draw illustrations wherever necessary.
35. Describe the anomalous secondary growth in *Boerhaavia* with illustrations.

(2 × 15 = 30 Marks)

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Botany

Core Course – I

**BO 1141 – ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND
PALYNOLOGY**

(2022 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in **1** or **2** sentences. Each question carries **1** mark.

Write short notes on :

1. Simple pits
2. Resins
3. Anisocytic
4. Glandular tissue
5. Eccentric starch grains
6. Sap wood
7. Bast fibers

8. Cystolith
9. Interfascicular cambium
10. Intine.

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** of the following. Each question carries **2** marks.

11. Comment on composition of plasma membrane.
12. Name a few excretory products in plants.
13. Give a brief account on essential oils in plants.
14. Describe the organization of root apex.
15. Write the functions of stomata.
16. Write an account on epidermis.
17. Comment on diffuse porous wood.
18. Explain the function of lenticels in plants.
19. What are Raphides?
20. Comment on anther wall layers.
21. What is the function of synergids?
22. Enumerate on Apical cell theory.

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** of the following questions. Each question carries **4** marks.

23. Give an account of laticifers.
24. Comment on the structure of graminaceous stomata.
25. Explain the anatomy of adicot leaf.
26. Differentiate between hardwood and softwood.
27. Comment on sporogenous tissue of anther.
28. Briefly explain the dehiscence of an anther.
29. With a neat diagram explain an orthotropusovule.
30. Write short notes on barriers of fertilization.
31. Comment on nuclear type of endosperm.

(6 × 4 = 24 Marks)

SECTION – D

Write an essay on **any two** of the following. Each question carries **15** marks.

32. What are permanent tissues? Explain the different types of permanent tissues in plants.
33. Describe the anomalous secondary growth in *Boerhaavia*.
34. Explain embryosac formation in occurring in *Adoxa*.
35. Give an account with sketches on the structure and development of dicotembryo.

(2 × 15 = 30 Marks)

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Botany

Complementary Course for Home Science, Zoology, Bio-Chemistry

**BO 1131 : MICROTECHNIQUES, ANGIOSPERM ANATOMY AND
REPRODUCTIVE BOTANY**

(2022 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in **one** or **two** sentences. Each question carries **1** mark.

1. What is a fixative?
2. Name two stains used in double staining.
3. What are bicollateral vascular bundles?
4. What are casparian strips?
5. What are medullary rays?
6. What is epiblema?
7. What are lateral meristems? Give an example.
8. What is phellogen?
9. What is porogamy?
10. What is sexual incompatibility?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** of the following. Each question carries **2** marks.

11. What is FAA? Write down its composition.
12. Differentiate between primary meristem and secondary meristem.
13. What are tracheids? Mention its functions.
14. List any two differences between monocot stem and monocot root.
15. What are tyloses?
16. Differentiate between amphivasal and amphicribal.
17. What is a quiescent centre?
18. List the components of ground tissue system.
19. What is a sap wood?
20. What are motor cells? Mention its functions.
21. List the process of fertilization in plants.
22. What are synergids?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** of the following. Each question carries **4** marks.

23. Explain composition and uses of safranin and Acetocarmine.
24. What are complex tissues? Briefly explain structure and functions of various components of phloem.
25. Explain the organization of root apex in detail.

26. Compare histogen theory and tunica-carpus theory.
27. Enumerate the identifying features of primary dicot stem.
28. Differentiate between ring porous wood and diffuse porous wood.
29. Draw a neat labelled diagram of lenticel.
30. Explain the features of a dicot embryo.
31. Explain the monosporic type of embryo sac development.

(6 × 4 = 24 Marks)

SECTION – D

Write essay on any **two** of the following. Each question carries **15** marks.

32. With a labelled diagram explain the anomalous secondary growth in *Boerhaavia*.
33. Explain the structure and functions of simple permanent tissues.
34. With a labelled diagram explain the secondary growth in dicot root.
35. With a labelled diagram explain structure of a mature anther.

(2 × 15 = 30 Marks)

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Botany

Complementary Course for Home Science, Zoology and Biochemistry

**BO 1131- MICROTECHNIQUE, ANGIOSPERM ANATOMY AND
REPRODUCTIVE BOTANY**

(2019 – 2021 Admission)

Time : 3 Hours

Max. Marks : 80

(Draw diagrams wherever necessary)

SECTION – A

Answer all questions. Each question carries 1 mark.

1. Comment on FAA.
2. What are tyloses?
3. Who proposed apical cell theory?
4. Define triple fusion.
5. What is protoxylem lacunae?
6. What is interfascicular cambium?
7. Comment on quiescent centre.

P.T.O.

8. What is endothecium?
9. Mention the abiotic agents of pollination.
10. What is meant by a radial vascular bundle?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** of the following. Each question carries **2** marks.

11. What are fibres? Mention the types?
12. Distinguish between open and closed vascular bundles.
13. What is calyptra? How it is formed?
14. Why fertilization in angiosperms is called double fertilization?
15. How Carnoy's fluid is prepared?
16. What is tapetum?
17. Distinguish between ring porous wood and diffuse porous wood.
18. What are lenticels? Comment on its functions.
19. Comment on the structure of collenchyma.
20. What are laticifers?
21. Differentiate between ray initials and fusiform initials.
22. What are bulliform cells? Comment on its function.

(8 × 2 = 16 Marks)

SECTION — C

Answer any **six** of the following. Each question carries **4** Marks.

23. Give an account of stains and their uses.
24. Explain the structure of anther.
25. Give a brief account on the secondary growth in dicot stem.

26. What are sclerids? Mention the types.
27. Discuss the procedure of double staining.
28. Explain the structure of dicot leaf with diagrams.
29. Discuss the structure of epidermal tissue system.
30. Explain the formation of periderm.
31. Explain tunica corpus theory. Compare it with histogen theory.

(6 × 4 = 24 Marks)

SECTION – D

Write an essay on any **two** of the following. Each carries **15** marks.

32. What are meristems? Classify meristems based on position, origin and functions.
33. Explain anomalous secondary growth in *Boerhaavia* stem with diagrams.
34. Discuss *Polygonum* type of embryosac development with diagrams.
35. Describe the structure of permanent tissues in plants.

(2 × 15 = 30 Marks)

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Botany

Complementary Course

**BO 1131 : MICROTECHNIQUES, ANGIOSPERM ANATOMY AND
REPRODUCTIVE BOTANY**

(2014-2018 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer all questions. Each question carries 1 mark.

1. What is the use of fixative?
2. What is the importance of plant anatomy?
3. What is the function of the root apical meristem?
4. Where is simple permanent tissue found?
5. Write the function of cuticle.
6. What is the primary structure of root?
7. Why is cambium important?
8. What is sapwood of a tree?

P.T.O.

9. What is main function of phellogen?
10. Where are female gametophyte in angiosperms?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** of the following. Each question carries **2** marks.

11. Name the four layers surround the pollen sac.
12. Which is the opening from where another dehiscence occur?
13. What is Megasporogenesis in angiosperms?
14. Why do plants need pollination?
15. What are lenticels how do they help plants?
16. How does an epidermis become a periderm?
17. Where tyloses are formed?
18. What are annular rings on a tree?
19. What are the components of epidermal tissue system?
20. What is the function of complex tissue in plants?
21. What are histogen layers?
22. How do you make a FAA solution?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** of the following. Each question carries **4** marks.

23. Briefly explain the Tunica Corpus theory.
24. What are vascular tissues and their functions?

25. What are the anatomical difference between root and stem?
26. Differentiate between ring porus wood and diffused porus wood.
27. Describe polygonum type of embryo sac.
28. What is Microsporogenesis explain with diagram?
29. What is Extrastellar secondary growth?
30. What are vascular bundles mention four types of vascular bundles with example?
31. Where are permanent tissues found in plants?

(6 × 4 = 24 Marks)

SECTION – D

Write an essay on **any two** of the following, **each** carries **15** marks.

32. What do you mean by double staining? Give an account on three stains studied by you.
33. Write an essay on classification of meristem based on origin, position and growth pattern.
34. What is anomalous secondary growth in Boerhaavia stem explain with diagram?
35. Describe with diagram the process of double fertilization and state its significances.

(2 × 15 = 30 Marks)