

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

Plant Science

PLA 1B 01—PLANT ANATOMY

(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. Distinguish between dicot root and monocot root.
3. Write notes on intussusception.
4. What are the differences between cystolith and raphides ?
5. Give a brief account of applied anatomy.
6. Define Nectaries.
7. Explain the characteristic features of xylem parenchyma.
8. What are bulliform cells ? Explain.
9. Write notes on glands and glandular hairs.
10. Explain exarch and endarch xylem with examples.
11. What are the characters of meristematic cells ?
12. Describe Hydathode with diagram.

(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. Describe with diagram the structure of Lenticels.
14. What are the main differences between the structure of dicot and monocot stem.
15. Give an account of extra cell wall materials.
16. Describe with diagram the anomalous secondary thickening in *Dracaena* stem.
17. Give an account of classification of stomata according to Metcalfe and Chalk. Draw diagrams.
18. Write notes on : (a) Starch grains ; (b) Sugars ; (c) Proteins ; (d) Fats ; and (e) Oils.
19. Describe with diagram the structure and function of phellogen.

(5 × 5 = 25 marks)

Section C

*Answer any **one** question.*

The question carries 11 marks.

20. Write an essay regarding the permanent tissues in plants. Draw diagrams.
21. Describe with diagram the normal secondary thickening in dicot stem.

(1 × 11 = 11 marks)

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(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Part A

Each question carries 2 marks.

15 questions. Ceiling 25.

1. What is secondary wall thickening ?
2. What heart wood and softwood ?
3. What is cystolith ?
4. What is intussusceptions ?
5. What are fibers and sclereids ?
6. Define complex tissues. Write an example.
7. What is collateral vascular bundle ?
8. Distinguish between protoxylem and metaxylem.
9. What are annual rings ? Write its significance.
10. Distinguish between aleuron grains and starch grains.
11. Explain structure of a stomata.
12. What is periderm ? Write its significance.
13. Comment on the salient anatomical features of monocot and dicot stem.
14. What are intercalary meristem ? Write its function.
15. Write the applications of meristem culture.

Part B

*Each questions carries 5 marks.
8 questions. Ceiling 35.*

16. Write the structure and composition of cell wall.
17. Write a short account on the reserve materials in plants.
18. Briefly explain the theories of apical organization.
19. Briefly explain the structure and function of simple tissues in plants.
20. Describe any five applications of anatomy.
21. Describe formation of secondary wood.
22. Give a brief account on the extra wall materials.
23. Describe the structure and formation of heart wood.

Part C

Answer any two of the following

24. With suitable diagram, explain the origin and types of vascular bundles.
25. Describe the types of complex and secretory tissues in plants.
26. With suitable diagram, describe anomalous secondary growth in *Dracena*.
27. Describe extrastelar secondary growth in dicot stem.

(2 × 10 = 20 marks)

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Plant Science

PLA 1B 01—PLANT ANATOMY

(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. What is hard wood ?
2. Define Growth rings.
3. What are bast fibres ? Mention its economic importance.
4. Distinguish between dicot leaf and monocot leaf.
5. What are the different types of tissues in ground tissue system ? Mention its region.
6. Distinguish between porous wood and diffuse porous wood.
7. Describe with diagram the tylosis in wood.
8. Explain the taxonomic significance of applied anatomy.
9. Write notes on apposition.
10. Explain with diagram Tunica-Corpus theory.
11. What are the characters of living mechanical tissue in plants ?
12. Write notes on hydathodes.

(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. Give an account of extra cell wall materials in plants.
14. Describe with diagram the structure of dicot leaf.
15. Write notes on the following types of vascular bundles :
(a) Conjoint collateral ; (b) Bicollateral ; (c) Concentric-Amphivasal, Amphicribal.
16. Describe with diagram the structural apparatus in Angiosperms.
17. Give an account of structure and composition of cell wall.
18. Describe with diagram the primary structure of monocot stem.
19. Write notes on secretory tissues in plants.

(5 × 5 = 25 marks)

Section C

Answer any one question.

Each question carries 11 marks.

20. Explain the various type of non-living inclusions present in plant cells.
21. Describe with diagram the anomalous secondary thickening in Boerhaavia stem.

(1 × 11 = 11 marks)