

## SECOND SEMESTER B.A./B.Sc. DEGREE EXAMINATION, APRIL 2020

(CBCSS—UG)

Plant Science

PLA 2B 02—METHODOLOGY AND PERSPECTIVES OF SCIENCE

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Part A***Each question carries 2 marks. 12 questions. Ceiling 20.*

1. What is molecular sieving ?
2. Explain buffer.
3. Write note on Fast green.
4. What is partition chromatography ?
5. Give a brief account of squash preparation.
6. What is falsification ?
7. Define inductive model.
8. What are factual truths ?
9. Which are the methods of presenting a scientific data ?
10. Name any two dehydrating agents used in dehydration.
11. Give an account of Light microscope.
12. What is adhoc hypothesis ? Explain.

**Part B***Each question carries 5 marks. 7 questions. Ceiling 30.*

13. Give an account of transparency and honesty in reporting of observational and experimental data.
14. Write notes on the various types of stains used in staining.

15. Write an account of Ocular micrometer.
16. Give an account of paraffin infiltration and embedding.
17. Which are the various types of Microtomes used in microtechniques ? Explain each.
18. What is the method of squash preparation ? Explain.
19. Compare features of Transmission Electron Microscope with Scanning Electron Microscope.

### Part C

*Each question carries 10 marks. 2 questions. Ceiling 10.*

20. What is Killing and Fixation ? Explain each.
21. Write an essay regarding the principle and various types of chromatography.

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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. What are the laws of science ?
2. What is scientific temper ?
3. Write notes on fluorescent microscope.
4. What is paraffin infiltration ?
5. Which are the common reagents in dehydration ?
6. What is molecular sieving ?
7. Explain Patents.
8. What is the use of hematoxylin ? Name its source.
9. Give a short note on source of scientific information.
10. Write composition of FAA and Carnoy's fixative.
11. Write notes on journal microscope.
12. Define double staining.

(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. Give an account of stage micrometer.
14. Write notes on ion exchange chromatography.
15. Give a brief account of acids, bases and measurement of pH.
16. What is the method of squash preparation ? Explain.
17. Give a detailed account about the Rotary microtome.
18. Define Hypothesis. What are the different types of hypothesis ?
19. Write an essay regarding the ethics in science.

(5 × 5 = 25 marks)

**Section C**

*Answer any one question.*

*The question carries 11 marks.*

20. Write an essay regarding the various types of experimentation in science.
21. Give an account of staining in Microtechnique.

(1 × 11 = 11 marks)

SECOND SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
APRIL 2021

Plant Science

PLA 2B 02—PLANT ANATOMY AND EMBRYOLOGY

Time : Three Hours

Maximum : 80 Marks

**Part A**

I. Answer *all* questions in one word/ Sentence. Each question carries 1 mark :

- 1 What is cystolith ?
- 2 Name two reserve materials in plants.
- 3 Explain radial vascular bundle.
- 4 What are tyloses ?
- 5 Explain closed vascular bundle.
- 6 Write about sclerids.
- 7 What are aleuron grains ?
- 8 What is Phellum ?
- 9 Explain lenticels.
- 10 Name a plant with bicollateral vascular bundle.

(10 × 1 = 10 marks)

**Part B**

II. Answer *all* questions. Each answers not exceeding 50 words. Each question carries 2 marks :

- 11 Give an account on annual rings.
- 12 Write about nectaries.
- 13 Explain thickening in cell wall.
- 14 Differentiate endarch and exarch xylem.

- 15 Explain concentric vascular bundle.
- 16 Explain Polyembryony.
- 17 Write about xylem.
- 18 Write a note on trichomes.
- 19 Explain triple fusion.
- 20 Write a note on laticifers.

(10 × 2 = 20 marks)

### Part C

III. Answer any *six* of the following. Each short essay not exceeding 150 words. Each question carries 5 marks :

- 21 Explain structure and classification of stomata.
- 22 Write a note on ground tissue system.
- 23 Explain histogen theory and Tunica Corpus theory.
- 24 Differentiate structure of monocot and dicot roots.
- 25 Explain polygonum type of embryosac.
- 26 Describe the structure of a monocot leaf.
- 27 Differentiate structure of monocot and dicot embryo.
- 28 Write about endosperm formation.

(6 × 5 = 30 marks)

### Part D

IV. Answer any *two* of the following. Each essay not exceeding 350 words. Each question carries 10 marks :

- 29 Explain structure and development of microsporangia.
- 30 Describe anomalous secondary growth citing example of *Boerhaavia* with diagram.
- 31 Explain normal secondary growth and extra stelar secondary thickening in dicot stem.

(2 × 10 = 20 marks)