**D 10691**

Name.....................................

Reg. No.................................

# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Plant Science

PLA 5D 01—MUSHROOM CULTIVATION

(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. Define Mycelium.

2. What is Casing ?

3. Define spawn.

4. Write two characteristic feature of poisonous mushrooms.

5. Name two edible mushrooms.

6. Name the different parts of a typical mushroom.

7. Name the different methods of spawning.

8. Why mushrooms are called "vegetable meat" ?

9. Write any two medicinal value of mushrooms.

10. Which are the raw materials used as spawn substrate ?

11. What are the advantages of pure grain spawn ?

12. Which are the two popular methods used for the preparation of hygienic substrate ?

(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. Describe the structure of *Agricus* with labelled diagram.

14. Explain briefly on different kinds of spawn.

**Turn over**

15. Describe the nutritional value of edible mushrooms.

16. Discuss the preparation of different agar media for mushroom culture.

17. Explain the various functions of casing layer.

18. Write brief note on packaging of mushrooms.

19. Which are the fungal diseases affecting mushrooms ?

(5 × 5 = 25 marks)

## Section C

*Answer any* **one** *question.*
*The question carries* 11 *marks.*

20. Explain briefly on post-harvest handling and preservation of mushrooms.

21. Describe the procedure of Oyster mushroom cultivation.

(1 × 11 = 11 marks)

# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Plant Science

## PLA 5B 07—PLANT PHYSIOLOGY AND BIOCHEMISTRY

(2019 Admissions)

Time : Two Hours and a Half                                      Maximum : 80 Marks

## Section A

*Answer at least* **ten** *questions.*
*Each question carries 3 marks.*
*All questions can be attended.*
*Overall Ceiling 30.*

1. Differentiate Apoplast and Symplast.

2. Differentiate between Macro and Micronutrients.

3. Differentiate between Chlorosis and Etiolation.

4. What is a balanced nutrient solution ? Give example.

5. What are Phytochromes ?

6. Describe absorption spectra.

7. Explain the role of P proteins in phloem translocation.

8. Write notes on the primary $CO_2$ acceptor in $C_4$ plants ?

9. Comment on paratonic movements.

10. Explain seed dormancy ?

11. What is buffer and buffer action ?

12. What is meant by quaternary structure of proteins ?

13. What is Fermentation ?

14. Comment on symbiotic nitrogen fixation.

15. What is meant by feed-back inhibition ?

(10 × 3 = 30 marks)

**Turn over**

## Section B

*Answer at least **five** questions.*
*Each question carries 6 marks.*
*All questions can be attended.*
*Overall Ceiling 30.*

16. Describe the apoplastic and symplastic pathways of water transport in plants.

17. Explain transpiration pull theory.

18. Compare and contrast PS1 and PS2.

19. Describe Kran'z anatomy. What is its significance ?

20. Write notes on plant responses to salt stress.

21. Write an account on various plant secondary metabolites and their role.

22. Describe the ultrastructure of mitochondrion.

23. Describe factors affecting respiration.

(5 × 6 = 30 marks)

## Section C

*Answer any **two** questions.*
*Each question carries 10 marks.*

24. Explain Soil-Plant-Atmosphere-Continuum. Add a note on factors affecting transpiration.

25. Write an essay on light reactions of photosynthesis.

26. Write an account on the categories and biological role of various plant hormones.

27. What are Lipids ? Write an essay on classification of lipids.

(2 × 10 = 20 marks)

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# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Plant Science

## PLA 5B 06—PHYTOGEOGRAPHY, ETHNOBOTANY AND ECONOMIC BOTANY AND EMBRYOLOGY

(2019 Admissions)

Time : Two Hours and a Half　　　　　　　　　　　　　　　　　Maximum : 80 Marks

### Section A

*Answer at least* **ten** *questions.*
*Each question carries 3 marks.*
*All questions can be attended.*
*Overall Ceiling 30.*

1.  In which family the following belong :

    (a)  Winged bean.

    (b)  Pomegranate.

2.  What is endemism ?

3.  What is phytogeography ?

4.  Give the binomial of Guva and Soya bean.

5.  What is glaciation ?

6.  Give the commercial names of :

    a)  *Trichosanthes anguina.*　　　　　b)  *Dalbergia latifolia.*

    c)  *Vitis vinifera.*　　　　　　　　　d)  *Momordica Charantia.*

7.  Write the names of two tribes in Kerala.

8.  In which class of economic use the following belongs :

    a)  Teak.　　　　　　　　　　　　　b)  Rauvolfia.

    c)  Rubber.　　　　　　　　　　　　d)  Ragi.

9.  Define ethnobotany. What are the importance of ethnobotany ?

**Turn over**

10. Write the morphology of useful part of :

    a) Cotton. b)   Cinnamon.

11. What is vicarism ?

12. What are the use of Papaya ?

13. What are masticatories ? Give the botanical name of tobacco.

14. Write a note on sporopollenin.

15. Explain double fertilization.

(10 × 3 = 30 marks)

## Section B

*Answer at least* **five** *questions.*
*Each question carries 6 marks.*
*All questions can be attended.*
*Overall Ceiling* 30.

16. Describe with diagram the structure of anther and microsporangium.

17. Give the binomial and family of the following :

    (a)  Ragi.                        (b)  Sesame.

    (c)  Sugarcane.                   (d)  Tea.

18. What are the ethonobotanical use of the following :

    (a)  *Ficus religiosa.*           (b)  *Cynadon dactylon.*

    (c)  *Ocimum sanctum.*            (d)  *Aegle marmelos.*

19. What are fibres ? Give a summary of fiber yielding plants in your syllabus.

20. Give an account of major tribes in South India.

21. Give an account of continental drift.

22. Write the common name and uses of the following :

    (a)  *Beta vulgaris.*

    (b)  *Brassica oleraceae.*

    (c)  *Eleusine corocana.*

    (d)  *Artocarpus integrifolius.*

    (e)  *Sesamum indicum.*

23. Write the binomial and family of any five essential oil producing species as per your syllabus.

(5 × 6 = 30 marks)

## Section C

*Answer any* **two** *questions.*
*Each question carries* 10 *marks.*

24. Describe with the diagram the monosporic type of embryo sac.

25. Write an essay regarding the vegetables in your syllabus. Give binomial also.

26. Write the binomial of any ten fruits as per your syllabus.

27. Write an essay regarding the centers of origin and distribution of species.

(2 × 10 = 20 marks)

# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Plant Science

PLA 5B 05—MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

(2019 Admissions)

Time : Two Hours and a Half             Maximum : 80 Marks

## Section A (Short Answer)

*Answer at least* **ten** *questions.*
*Each question carries 3 marks.*
*All questions can be attended.*
*Overall Ceiling* 30.

1. What are the vegetative features of the family Rubiaceae ?

2. Define epigynous condition. Give an example.

3. Distinguish between racemose and cymose type of inflorescence.

4. What is fusiform root ? Give an example.

5. Define holotype.

6. What is diadelphonus condition ? Give an example.

7. Define didynamouss condition. Give an example.

8. Explain the nature of gynoecium in Nymphaea.

9. Distinguish between ray florets and disc florets.

10. Write the binomials of any two medicinal plants in the family Apiacea.

11. Define hooded anther. Give an example.

12. What is an aggregate fruit ? Give an example.

13. Explain pinnately compound leaves with example.

14. Write any two floral characters of Apocynaceae.

15. What are the types of vegetative modifications in the family Liliaceae ?

(10 × 3 = 30 marks)

**Turn over**

## Section B

*Answer at least* **five** *questions.*
*Each question carries 6 marks.*
*All questions can be attended.*
*Overall Ceiling 30.*

16. Explain the keys for plant identification and its applications ?

17. Describe with the diagrams the different types of underground stem modifications.

18. What are the characteristic features of the family Lamiaceae ?

19. Describe with the diagram the floral characters of Orchidaceae.

20. What are the advanced characters of the family Asteraceae ?

21. Give a brief account of different types of mixed inflorescences.

22. Write a note on ICN, its principles and rules.

23. Describe with diagram the different types of simple fleshy fruits.

(5 × 6 = 30 marks)

## Section C

*Answer any* **two** *questions.*
*Each question carries 10 marks.*

24. What is Herbarium ? Explain various methods in preparation of herbarium.

25. Explain Bentham and Hookers system of plant classification. What are its merits and demerits ?

26. Write an essay regarding the characters of the family Papilionaceae (Fabaceae)-Draw diagram.

27. What are the important characters of the family Cucurbitaceae ? Draw the diagram and write the economic importance.

(2 × 10 = 20 marks)

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(Pages : 2)

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# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CUCBCSS—UG)

Plant Science

## PLA 5B 07—PLANT PHYSIOLOGY AND BIOCHEMISTRY

Time : Three Hours

Maximum : 80 Marks

## Part A

I. Answer *all* questions in *one* word/sentence :

1 Name the source of electron in non cyclic electron transport of light reaction.

2 Which plant hormone is known as stress hormone ?

3 Define plasmolysis.

4 Give an example for a chemical antitranspirant.

5 Write the biological functions of Molybdenum.

6 Define seed viability.

7 Give example for a keto heptose sugar.

8 What are omega-3 fatty acids ?

9 What is protein renaturation ?

10 What is allelopathy ?

(10 × 1 = 10 marks)

## Part B

II. Answer *all* questions. Each answers not exceeding 50 words :

11 Differentiate between ubiquinone and cytochrome.

12 Explain uniport, symport and antiport.

13 Explain the role of mycorrhiza in mineral absorption.

14 Differentiate between fluorescence and phosphorescence.

15 Give a short account on Light harvesting complexes.

16 Explain vernalisation.

17 Describe the link reaction of aerobic respiration.

18 Explain the significance of metabolic intermediates.

**Turn over**

19  Illustrate the structure of sucrose.

20  Differentiate between saturated and unsaturated fatty acids.

(10 × 2 = 20 marks)

**Part C**

III.  Answer any *six* of the following. Each short essays not exceeding 150 words :

21  Explain the concept and components of water potential.

22  Point out the significance of SPAC concept to explain ascent of sap.

23  Write an account on electromagnetic spectrum.

24  Explain the mechanism of phloem transport.

25  Give an account on various plant movements.

26  Explain cyanide resistant respiration.

27  Describe the mechanism of enzyme action.

28  Write a note on the functions of nucleotides.

(6 × 5 = 30 marks)

**Part D**

IV.  Answer any *two* of the following. Each essays not exceeding 350 words :

29  Describe the physical and chemical properties of water that support life on earth.

30  Compare C4 cycle and CAM pathway.

31  Explain oxidative phosphorylation on the basis of chemi-osmotic theory.

(2 × 10 = 20 marks)

# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

## (CUCBCSS—UG)

### Plant Science

### PLA 5B 06—PHYTOGEOGRAPHY, ETHNOBOTANY AND ECONOMIC BOTANY

Time : Three Hours　　　　　　　　　　　　　　　　　　　　Maximum : 80 Marks

## Part A

I. Answer *all* questions in one word/sentence :

　1　What is glaciation ?

　2　Write the names of two tribes in Kerala.

　3　Give the binomial of Guava ?

　4　Write the common name of Glycine max.

　5　In which family pome granate belongs.

　6　What are land bridges ?

　7　Name any *one* use of papaya.

　8　Write the morphology of useful part in Tea.

　9　What is vicarism ?

　10　Write the binomial of winged bean.

(10 × 1 = 10 marks)

## Part B

II. Answer *all* questions. Each answers not exceeding 50 words :

　11　Write the binomials of :

　　　(a)　Ragi.　　　　　　　　(b)　Rice.

　12　Give the commercial names of :

　　　(a)　Psophocarpus tetragonolobus.

　　　(b)　Psidium guajava.

　　　(c)　Trichosanthes anguinea.

　　　(d)　Dalbergia latifolia.

**Turn over**

13. What is age and area hypothesis ?

14. Write the morphology of useful part of : (a) Cotton ; and (b) Cinnamon.

15. What are masticatories ? Give the botanical name of Betel nut.

16. What are the uses of : (a) Sesame ; and (b) Cananga.

17. What are the ethnobotanical importance of Cynadon dactylon and Curcuma longa ?

18. Define ethnobotany. What are the importance of ethnobotany ?

19. Write the bonomials of : (a) Jack fruit ; and (b) Cotton.

20. In which class of economic use the following belongs :

   (a) Camphor.                        (b) Rauwolfia.

   (c) Rubber.                         (d) Ragi.

                                                    (10 × 2 = 20 marks)

### Part C

III. Answer any six of the following. Each short essays not exceeding 150 words :

21 Write the botanical name, family and uses of the following :

   (a) Anthurium.                      (b) Cocoa.

   (c) Mustard.                        (d) Eclipta.

22 Give an account of major tribes in South India.

23 Write the Binomial and morphology of useful part and uses of the following :

   (a) Ragi.                           (b) Green gram.

   (c) Mangosteen.                     (d) Beetroot.

24 Give an account of matters related to continental drift.

25  Write the common name and uses of the following.

    (a)  Saccharum officinarum      (b)  Artocarpus integrifolius.

    (c)  Areca catechu             (d)  Theobroma cacao.

    (e)  Piper longum.

26  Give the botanical name and family of the following :

    (a)  Champak.                (b)  Lemongrass.

    (c)  Turmeric.               (d)  Dammar.

    (e)  Rosewood.

27  What are fibres ? Give a summary of fibre yielding plants as per your syllabus ?

28  What are the ethnobotanical uses of the following ?

    (a)  Ficus religiosa.         (b)  Cynadon dactylon.

    (c)  Ocimum sanctum.       (d)  Aegle marmelos.

    (e)  Curcuma longa.

$(6 \times 5 = 30$ marks$)$

## Part D

IV.  Answer any *two* of the following. Each essays not exceeding 350 words :

29  Write the botanical name and uses of any six pulses (legumes) in your syllabus.

30  Write an essay regarding the centres of origin and distribution of plants.

31  Give the binomials, family and morphology of useful part of any five spices in your syllabus.

$(2 \times 10 = 20$ marks$)$

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Name............................................

Reg. No....................................

# FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

## (CUCBCSS—UG)

### Plant Science

### PLA 5B 05—MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

Time : Three Hours                                                    Maximum : 80 Marks

## Part A

I. Answer *all* questions in one word/sentence :

   1   What is syngenesious condition ? Give an example.

   2   Define hooded anther ? Give an example.

   3   What is Bran ?

   4   Describe the fruit samara.

   5   What is an isotyte ?

   6   What is an aggregate front ?

   7   Define Placentation.

   8   What is an Aril ?

   9   Define buttress roots.

   10   What is a Tendril ?

(10 × 1 = 10 marks)

## Part B

II. Answer *all* questions. Each answers not exceeding 50 words :

   11   Describe rhizome with an example

   12   Explain pinnately compound leaves with examples.

   13   Define Hypanthodium.

   14   What are cohesion and adhesion ?

   15   Write the 4 different systems of classification with their authors.

**Turn over**

16  Write any *two* floral characters of Apocynaceae.

17  Explain typification.

18  What are the floral characters of the family Myrtaceae ?

19  What are the types of vegetative modifications in the family Liliaceae.

20  Define dichasial cyme.

(10 × 2 = 20 marks)

## Part C

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

21  Explain the plant identification keys and its applications.

22  Describe with diagram the floral characters of the family Poaceae.

23  Give an account about the characters of the family Asteraceae.

24  What are the diagnostic features of the family Nymphaeaceae ?

25  What are the floral and fruit characters of the family Lamiaceae ?

26  Describe with diagrams the different types of underground stem modifications ?

27  Describe with diagrams any three mixed type of inflorescence.

28  Describe with diagram the simple dry fruits.

(6 × 5 = 30 marks)

## Part D

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

29  Write an essay regarding the characters of the family Orchidaceae. Mention its advanced features. Draw diagrams.

30  Give an account of taxonomic information sources like herbarium, botanical gardens etc.

31  Explain Bentham and Hookers system of plant classification. What are its merits and demerits ?

(2 × 10 = 20 marks)