

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

Botany

BOT 3C 03—MORPHOLOGY, SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT  
BREEDING AND HORTICULTURE

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. Differentiate between simple and compound leaf.
2. Explain didynamous stamens, citing an example.
3. Write notes on cytotaxonomy.
4. What is meant by phylogenetic system of classification ?
5. Describe the androecium in Papilionaceae.
6. Explain the nature of corolla and stamens in Rubiaceae.
7. Write about the morphology of the useful part and uses of any two medicinal plants.
8. Write the binomial and family of any *two* beverages.
9. Define Hybridization. Differentiate between intervarietal and interspecific hybridization.
10. What is polyploidy breeding ? Give an example of a plant produced by this method.
11. What are the advantages of seed propagation ?
12. Write notes on vegetative propagation by root cuttings.

(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. What is Aestivation ? Explain different types of aestivation.
14. Describe the floral characters of the family Euphorbiaceae.
15. Write about the significance of herbaria and botanical gardens.
16. Give detailed account on the basic rules of nomenclature.
17. Write the binomial, family and morphology of the useful part of any *two* spices and two pulses.
18. Explain the technique of breeding for disease resistance.
19. Write a detailed account on the technique of budding and the different types of budding.

(5 × 5 = 25 marks)

**Section C**

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

20. Describe different types of racemose inflorescences with an example for each. Draw schematic diagrams.
21. Explain the distinguishing characters of Malvaceae family.

(1 × 11 = 11 marks)

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

Botany

**BOT 3B 03—PHYCOLOGY, BRYOLOGY AND PTERIDOLOGY**

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. Describe the mode of asexual reproduction in *Polysiphonia*.
2. Write short notes on nutrition in algae.
3. Describe cap cell formation in *Oedogonium*.
4. What are hormogonia ? How are they formed ?
5. What are the reasons for ascribing *Vaucheria* to Xanthophyceae ?
6. Write notes on fossil bryophytes.
7. The sporophyte of *Riccia* is considered to be primitive. Why ?
8. Describe any *two* methods of vegetative reproduction in *Funaria*.
9. Describe the prothallus in *Pteris*.
10. List out any *four* differences of pteridophytes and bryophytes.
11. Explain the structure of sporangiophore and spores in *Equisetum*.
12. Differentiate between leptosporangiate and eusporangiate sporangia.

(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 position and structure of sex organs in *Chara*.
14. Write an account on the harmful effects of algae.

**Turn over**

15. Describe the structure of sporophyte of *Anthoceros* and the dehiscence of the capsule.
16. Write about the economic importance of bryophytes.
17. Write notes on apogamy and apospory in pteridophytes.
18. Describe different types of siphonosteles found in pteridophytes with the help of diagrams.
19. Explain the external morphology of the sporophyte and the structure of gametophyte in *Psilotum*.  
(5 × 5 = 25 marks)

### Section C

Answer any **one** question.

The question carries 11 mark.

20. Describe the thallus structure and mode of reproduction in *Sargassum*.
21. What is heterospory ? Illustrate your answer with reference to the life cycle of *Selaginella*.  
(1 × 11 = 11 marks)

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2020**

Botany

BOT 3C 03—SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT BREEDING AND  
HORTICULTURE

Time : Three Hours

Maximum : 64 Marks

**Section A**

*Answer all questions in a word or phrase.*

*1 mark each.*

1. The individual units of androecium.
2. Give an example for an actinomorphic flower.
3. Name the essential whorls of a flower.
4. Arrangement of sepals and petals in a flower.
5. What is the standard size of a herbarium sheet ?
6. Expand ICBN.
7. Name a family with dumbbell shaped stigma.
8. The offspring produced by crossing two different plants.
9. The term for the plant part grafted onto the root stock.
10. Write the morphology of the useful part in pepper and gingelly.

(10 × 1 = 10 marks)

**Section B (Short Answer Questions)**

*Answer any seven out of ten questions.*

*2 marks each.*

11. Distinguish apocarpous and syncarpous pistils.
12. What is meant by binomial nomenclature ? Who introduced this system ?
13. Write any four functions of botanical gardens.
14. Explain free central placentation.

**Turn over**

15. What is meant by valid publication ?
16. Comment on phylogenetic classification.
17. Describe the inflorescence in Poaceae.
18. What is meant by clonal selection ?
19. Comment on air layering.
20. Write the binomial of tea and coffee.

(7 × 2 = 14 marks)

### Section C (Short Essay Questions)

Answer any **six** out of eight questions.  
4 marks each.

21. Explain symmetry in flowers.
22. What is Phyllotaxy ? Describe different types.
23. Describe the corolla and gynoecium in Papilionaceae.
24. Explain the structure of a typical flower of Malvaceae family.
25. Comment on the merits of Bentham and Hooker's classification.
26. Write a brief account of mutation breeding.
27. Explain breeding for disease resistance.
28. Write the binomial, family and morphology of the useful part of a fibre yielding plant and two pulses.

(6 × 4 = 24 marks)

### Section D (Essay Questions)

Answer any **two** out of three questions.  
8 marks each.

29. Describe the distinguishing features of Euphorbiaceae family.
30. Explain the different methods of cutting, grafting and layering.
31. Describe the different types of racemose inflorescences.

(2 × 8 = 16 marks)

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2020**

Botany

**BOT 3B 03—MICROBIOLOGY, MYCOLOGY, PHYCOLOGY, LICHENOLOGY AND  
PLANT PATHOLOGY**

Time : Three Hours

Maximum : 80 Marks

**Section A**

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

1. Name a symbiotic bacterium.
2. Give an example for a phototrophic bacterium.
3. Who discovered the phenomenon of transformation in bacteria?
4. Give an example for a fungus in which somatogamy take place.
5. An example of a fungus growing in cow dung.
6. The class of fungi in which clamp connections are present.
7. Write the names of the algal and fungal partner in a lichen.
8. Name the spores produced in lichens after sexual reproduction.
9. The condition of disappearance of chlorophyll in plants.
10. Name the pathogen in leaf mosaic of tapioca.

(10 × 1 = 10 marks)

**Section B (Short Answer Questions)**

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

11. Write notes on nucleic acids found in viruses.
12. Write a brief account on viroids.
13. What is plasmid ? Comment on its role.
14. Comment on morphological forms of bacteria.

**Turn over**

15. Write notes on asexual reproduction in *Albugo*.
16. Explain the structure of apothecium of *Peziza*.
17. How will you differentiate between a conidium and sporangiospore ?
18. Write notes on the medicinal uses of fungi.
19. What is soredium ? What is its function ?
20. What are the symptoms of citrus canker ?

(10 × 2 = 20 marks)

### Section C (Short Essay Questions)

Answer any **six** questions.

Each question carries 5 marks.

21. Describe the morphology of viruses.
22. Explain the structure of bacterial cell wall.
23. Discuss about nutrition in bacteria.
24. What is pure culture ? Describe the techniques that you have studied.
25. What are imperfect fungi ? Enumerate their important characters.
26. Describe the structure of basidiocarp of *Agaricus*.
27. Discuss the role of lichens as dyes, cosmetics, perfumes and medicines
28. Give an account of control measures against plant diseases.

(6 × 5 = 30 marks)

### Section D (Essay Questions)

Answer any **two** questions.

Each question carries 10 marks.

29. Write down the distinguishing features of Ascomycotina.
30. Describe the part of life cycle of *Puccinia* in wheat plant.
31. Write an essay on the economic importance of bacteria.

(2 × 10 = 20 marks)



**THIRD SEMESTER (CUCBCSS—UG) [SPECIAL] DEGREE EXAMINATION  
NOVEMBER 2019**

**Botany**

**BOT 3C 03—SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT BREEDING AND  
HORTICULTURE**

Time : Three Hours

Maximum : 64 Marks

**Section A**

*Answer all questions in a word or phrase.*

*1 mark each.*

1. The pattern of arrangement of veins in the leaf blade.
2. Give an example for a regular flower.
3. The female reproductive part of a flower.
4. Who introduced binomial nomenclature ?
5. The metal box used to collect plant specimens.
6. The characteristic fruit of Poaceae.
7. Name a family with monocarpellary ovary.
8. An agent causing mutation.
9. A plant, stem or root onto which a graft is made.
10. What is the morphology of the useful part in paddy and clove ?

(10 × 1 = 10 marks)

**Section B (Short Answer Questions)**

*Answer any seven out of ten questions.*

*2 marks each.*

11. Describe a dichasial cyme.
12. Write the name of a major herbarium and botanical garden in India.
13. Explain priority in nomenclature.
14. What is meant by cytotaxonomy ?

**Turn over**

15. Comment on artificial classification.
16. Describe the androecium in Malvaceae.
17. Describe a pinnately compound leaf.
18. Write about any four objectives of plant breeding.
19. Give a brief account on air layering.
20. Write the binomial and family of coffee and wheat.

(7 × 2 = 14 marks)

### Section C (Short Essay Questions)

*Answer any six out of eight questions.  
4 marks each.*

21. Classify flowers based on position of ovary with respect to other floral organs.
22. Describe different types of aestivation.
23. Describe the corolla and androecium in Papilionaceae.
24. Describe the floral characters of Rubiaceae.
25. What are the special features of Bentham and Hooker's classification.
26. Write an account on polyploidy breeding with reference to wheat.
27. Explain breeding for disease resistance.
28. Write the binomial, family and morphology of useful part of fibre yielding plants and pulses.

(6 × 4 = 24 marks)

### Section D (Essay Questions)

*Answer any two out of three questions.  
8 marks each.*

29. Describe the distinguishing features of the family Euphorbiaceae.
30. Describe the different methods of cutting, grafting and budding.
31. Write an essay on different types of racemose inflorescences.

(2 × 8 = 16 marks)

**THIRD SEMESTER (CUCBCSS—UG) SPECIAL DEGREE EXAMINATION  
NOVEMBER 2019**

**Botany**

**BOT 3B 03—MICROBIOLOGY, MYCOLOGY, PHYCOLOGY, LICHENOLOGY AND  
PLANT PATHOLOGY**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.*

*Each question carries 1 mark.*

1. What is the main component of bacterial cell wall.
2. Name a disease caused by viroids.
3. Which is the genetic material in plant viruses ?
4. Give the scientific term for the symbiotic association of a fungus with the roots of higher plants.
5. In which form, reserve food material is stored in fungi ?
6. Name the fungus which cause tikka disease in groundnut.
7. What is the name of the algal partner in a lichen and what is its main function ?
8. Write the name of a foliose lichen.
9. What is the main symptom of blight disease ?
10. Name the pathogen of blast of paddy.

(10 × 1 = 10 marks)

**Section B (Short Answer Questions)**

*Answer all questions.*

*Each question carries 2 marks.*

11. What are the functions of protein coat and nucleic acid in a virus ?
12. Write a brief note on prions.
13. What is plasmid ? Write the role played by any one plasmid
14. Write note on single cell protein.
15. Write any two applications of fungi in industry ?

**Turn over**

16. Write a brief account on fungal toxins.
17. Comment on appressorium and haustoria.
18. Describe the internal structure of gills in *Agaricus*.
19. Write notes on cephalodium.
20. What are the symptoms of root wilt of coconut ?

(10 × 2 = 20 marks)

### Section C (Short Essay Questions)

*Answer any six questions.*

*Each question carries 5 marks.*

21. Describe the structure of TMV.
22. Identify all the structures external to the cell wall in bacteria. Comment on their function.
23. Explain how genetic recombination take place in bacteria by transformation.
24. Explain bacterial pure culture techniques that you have studied.
25. List out the important features of the division Zygomycotina.
26. Write a note on asexual reproduction in *Albugo*.
27. Describe sexual reproduction in lichens.
28. Write notes on the mechanism of disease resistance.

(6 × 5 = 30 marks)

### Section D (Essay Questions)

*Answer any two questions.*

*Each question carries 10 marks.*

29. Write an account on the economic importance of fungi.
30. Explain the structure and functions of various spore forms occurring in the life cycle of *Puccinia*.
31. Write an essay on the architecture and multiplication of bacteriophages.

(2 × 10 = 20 marks)

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

Botany

BOT 3C 03—MORPHOLOGY, SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT  
BREEDING AND HORTICULTURE

(2019—2020 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 phyllotaxy ? Explain opposite phyllotaxy.
2. Distinguish monochlamydeous and dichlamydeous flowers.
3. Write the name of an international and national botanical garden.
4. Describe the androecium in Malvaceae.
5. Explain the nature of corolla in Papilionaceae.
6. What is meant by a valid publication ?
7. Write about the morphology of the useful part and uses of Curcuma and Santalum.
8. Write the binomial and family of two spices.
9. What are the objectives of plant breeding ?
10. What is hybridization ? Distinguish interspecific and intergeneric hybridization.
11. What is meant by layering ? Explain with an example.
12. What are the disadvantages of seed propagation ?

(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. Write about adhesion and cohesion of stamens.
14. Comment on the merits of Bentham and Hooker's classification.
15. Describe the floral characters of the family Euphorbiaceae.
16. Write an account on modern trends in taxonomy.
17. Write the binomial, family, morphology of the useful part and uses of a) two cereals and b) two beverages.
18. Explain the technique of vegetative propagation of plants by cuttings.
19. Give a detailed account of plant introduction.

(5 × 5 = 25 marks)

**Section C**

*Answer any one question.*

*Each question carries 11 marks.*

20. Describe different types of cymose and special types of inflorescences.
21. What is herbarium? Write an essay on herbarium techniques and its importance.

(1 × 11 = 11 marks)

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

Botany

BOT 3B 03—PHYCOLOGY, BRYOLOGY AND PTERIDOLOGY

(2019—2020 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. Distinguish coenobial forms and siphonaceous forms of algae. Give one example for each.
2. Write a short note on phytoplanktons and water blooms.
3. Comment on the role of algae as : (a) Biofuels ; and (b) Pollution indicators.
4. How would you differentiate between macrandrous and nannandrous forms of *Oedogonium* ?
5. Write notes on sex organs in *Vaucheria*.
6. Differentiate between scales and rhizoids in bryophytes.
7. Describe the sporophyte in *Riccia*.
8. Explain the internal structure of thallus in *Anthoceros*.
9. Differentiate between homosporous and heterosporous pteridophytes, citing examples.
10. Write notes on the spore producing organs of *Psilotum*.
11. Write any four resemblances of pteridopytes with bryophytes.
12. Explain the sporophyll and sorus in *Pteris*.

(8 × 3 = 24 marks)

**Section B**

*Answer atleast five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall ceiling 25.*

13. Describe different types of asexual spores produced in algae.
14. Write notes on alternation of generation in *Sargassum*.

**Turn over**

15. Write an account on the economic importance of bryophytes.
16. Write about sexual reproduction in *Funaria*.
17. Write notes on economic importance of pteridophytes.
18. Describe different types of protosteles found in pteridophytes with examples and diagrams.
19. Bring out the internal structure of the internode in *Equisetum*.

(5 × 5 = 25 marks)

### Section C

Answer any **one** questions.

The question carries 11 marks.

20. What is meant by diplobiontic type of life cycle ? Illustrate your answer with *Polysiphonia* as an example.
21. With the help of diagrams, explain the life cycle of *Selaginella*.

(1 × 11 = 11 marks)



**THIRD SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION  
NOVEMBER 2021**

Botany

BOT3C03—SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT BREEDING AND  
HORTICULTURE

(2014—2018 Admissions)

Time : Three Hours

Maximum : 64 Marks

**Section A**

*Answer all questions in a word or phrase.*

*1 mark each.*

1. The leaf with only a single lamina.
2. Give an example for an irregular flower.
3. The male reproductive part of a flower.
4. Name the biologist who introduced binomial nomenclature.
5. Give an example for a poisoning chemical used in herbarium preparation.
6. Name a family with epipetalous stamens.
7. The main axis of an inflorescence.
8. Give an example for a physical mutagen.
9. The term for the plant part grafted onto the root stock.
10. Write the morphology of the useful part in wheat and cotton.

(10 × 1 = 10 marks)

**Section B (Short Answer Questions)**

*Answer any seven out of ten questions.*

*2 marks each.*

11. Distinguish spike from a spadix.
12. Write any four functions of herbaria.
13. Explain effectivity in nomenclature.

**Turn over**

14. What is meant by chemotaxonomy ?
15. Comment on natural classification.
16. Describe the androecium in Malvaceae.
17. Describe a palmately compound leaf.
18. Comment on plant introduction.
19. Write notes on vegetative propagation by leaf and root cuttings.
20. Write the binomial of : (a) Gingelly ; and (b) Rubber.

(7 × 2 = 14 marks)

### Section C (Short Essay Questions)

*Answer any six out of eight questions.  
4 marks each.*

21. Write an account on cohesion and adhesion of stamens.
22. Describe different types of placentation.
23. Describe the androecium and gynoecium in Papilionaceae.
24. Write an account on the main features of bentham and Hooker's classification.
25. Describe the floral characters of the family Apocynaceae.
26. Explain mutation breeding.
27. Write an account of clonal selection.
28. Write the binomial, family and morphology of the useful part of a pulse, a beverage and a medicinal plant.

(6 × 4 = 24 marks)

### Section D (Essay Questions)

*Answer any two out of three questions.  
8 marks each.*

29. Describe the distinguishing characters of Rubiaceae family.
30. Describe the different methods of layering, grafting and budding.
31. Explain the different types of cymose and special types of inflorescence.

(2 × 8 = 16 marks)

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(Pages : 2)

Name.....

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**THIRD SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION  
NOVEMBER 2021**

Botany

**BOT 3B 03—MICROBIOLOGY, MYCOLOGY, PHYCOLOGY, LICHENOLOGY AND  
PLANT PATHOLOGY**

(2014—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.*

*1 mark each.*

1. Name the protein present in the flagella of bacteria.
2. Give an example for a chemosynthetic bacterium.
3. What name is given to a virus which infects bacteria ?
4. Name of the sexually produced, non-motile spore of endogenous origin in fungi.
5. The term for the fungi which grow in dung.
6. The group of fungi whose perfect stages are unknown.
7. What is the name of the fungal partner in a lichen ? What is the main function ?
8. Lichens growing on rocks.
9. Death of cells, tissues or organs of the host due to parasitic infection.
10. Name the pathogen in mahali disease of arecanut.

(10 × 1 = 10 marks)

**Section B (Short Answer Questions)**

*Answer all questions.*

*2 marks each.*

11. Distinguish lytic and lysogenic phases in the life cycle of a virus.
12. Write an account of retroviruses.
13. Distinguish photoautotrophic and chemoautotrophic bacteria.

**Turn over**

14. Write down any *four* important prokaryotic features of bacteria.
15. What is basidiocarp ? Write the name of a fungus having it.
16. What are chlamyospores ?
17. Write short notes on sclerotium and stromata.
18. Describe the structure of gill in *Agaricus*.
19. Write notes on isidium.
20. What are the symptoms of bunchy top of banana ?

(10 × 2 = 20 marks)

### Section C (Short Essay Questions)

*Answer any six.*

*5 marks each.*

21. Describe the structure of a T<sub>2</sub> bacteriophage.
22. Explain the structure of flagella in bacteria. Comment on its function.
23. All bacteria are not our enemies. Comment upon the statement.
24. Write notes on : (a) Milk products ; and (b) Single cell proteins.
25. List out the important features of Ascomycotina.
26. Describe the methods of asexual reproduction in *Mucor*.
27. Discuss the ecological importance of lichens and their role as medicines.
28. Write an account of control measures for plant pathogens.

(6 × 5 = 30 marks)

### Section D (Essay questions)

*Answer any two.*

*10 marks each.*

29. Are fungi friends or enemies of mankind. Explain giving examples.
30. What are the different types of spores produced in *Puccinia graminis* ? Explain their origin.
31. Write an essay on any two types of genetic recombination in bacteria.

(2 × 10 = 20 marks)