

II Semester B.Sc. Examination, April/May 2015
(CBCS) (Fresh) (2014-15 and Onwards)
BOTANY (Paper – II)

Diversity of Non Vascular Plants – Part – II
Mycology, Plant Pathology, Bryophytes and Plant Anatomy

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer all questions.
2) Draw diagrams wherever necessary.

A. Explain/Define any ten (10) of the following in two or three sentences : (10×2=20)

- 1) What is coenocytic mycelium ?
- 2) Define hartignet.
- 3) Classify fungi based on their mode of nutrition.
- 4) Give any two control measures of coffee rust.
- 5) Name the pathogen and host of rotten neck disease.
- 6) What is "Kole roga" ? Give any two symptoms.
- 7) What is protonema ? Mention its role.
- 8) Name the amphibians of the plant kingdom. Give an example.
- 9) Mention any two differences between rhizoids and scales of Marchantia.
- 10) What are tyloses ?
- 11) Glandular tissues.
- 12) Mention any two functions of collenchyma.

B. Write critical notes on any four (4) of the following :

(4×5=20)

- 13) Economic importance of lichens.
- 14) Apothecium of peziza.
- 15) Give a general account of symptoms, causal organism and control measures of red rot of sugarcane.
- 16) Biopesticides.
- 17) Tunica corpus theory with a neat labelled diagram.
- 18) With a neat labelled diagram, explain phloem tissue.

P.T.O.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

SA – 649



C. Give a comprehensive account of **any three (3)** of the following : (3×10=30)

19) With a neat labelled diagram, explain the structure and sexual reproduction in Albugo.

20) What is smut disease ? Give the symptoms, causal organism and control measures.

21) Describe the L.S. of sporophyte of funeria with a neat labelled diagram.

22) Explain :

a) Structure of Gemma cup.

b) T.S. of anthoceros thallus with labelled diagram.

23) Anomalous secondary growth in Dracaena stem.

RANJITH KUMAR H T

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA



II Semester B.Sc. Examination, May 2016
(CBCS) (2014-15 and Onwards) (Fresh + Repeaters)
BOTANY – II
Diversity of Nonvascular Plants (Part – II)
Mycology, Plant Pathology, Bryophytes and Plant Anatomy

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Answer *all* questions.
2) Draw diagrams *wherever* necessary.

A. Explain/Define **any ten (10)** of the following in **two or three** sentences : **(10×2=20)**

- 1) Classify fungi based on their nutrition.
- 2) Mention any two industrial uses of fungi.
- 3) What are Crustose Lichens ? Give an example.
- 4) Differentiate the symptoms of Rust and Smut.
- 5) Name the pathogen of koleroga, mention any two symptoms of the disease.
- 6) Mention any two plant diseases controlled by Trichoderma.
- 7) Draw a neat labelled diagram of Marchantia Thallus.
- 8) Mention any two vegetative reproduction in Bryophytes.
- 9) What are Elaters ? Mention the function.
- 10) Mention any two functions of Parenchyma.
- 11) Name the elements of food conducting tissue.
- 12) Differentiate between Spring and Autumn wood.

B. Write critical notes on **any four (4)** of the following :

(4×5=20)

- 13) Fruiting bodies of Ascomycetes.
- 14) Mycorrhiza.

MS – 326



- 15) Bacillus thurengiensis as Biopesticide.
- 16) Structure of Funaria Gametophyte.
- 17) Sclerenchyma.
- 18) Stelar secondary growth in Dicot stem.

C. Give a comprehensive account of **any three (3)** of the following : (3×10=30)

- 19) Importance of Fungi in Industries and Medicine.
- 20) Coffee rust.
- 21) Sporogonium of Marchantia.
- 22) Vascular Tissues.
- 23) Anomalous Secondary Growth in Boerhaavia stem.

RANJITH KUMAR H T

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA



II Semester B.Sc. Examination, May 2017
(CBCS) (2014 - 15 & Onwards) (Fresh + Repeaters)

BOTANY - II

Diversity of Non-Vascular Plant (Part - II)
Mycology, Plant Pathology, Bryophytes and Plant Anatomy

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer *all* questions.
2) Draw diagrams *wherever* necessary.

PART - A

A. Explain/Define **any ten** of the following in **two** or **three** sentences : (10x2=20)

- 1) Name any four types of Asexual spores in fungi.
- 2) What is monokaryotic mycelium ? Give example.
- 3) What are Carpogonia ? Give example.
- 4) Write any two symptoms and causal organism of coffee rust.
- 5) Differentiate between chlorotic and necrotic lesions.
- 6) Write any two control measures of Red rot of sugarcane.
- 7) Differentiate between rhizoids and scales of Marchantia.
- 8) What are pseudocelaters ? Mention their function.
- 9) List any two important characters of Bryophytes.
- 10) Write any two differences between Tracheids and Trachea.
- 11) Mention any two functions of collenchyma.
- 12) What are Tyloses ?

P.T.O.

US – 368



PART – B

B. Write critical notes on **any four** of the following :

(4×5=20)

- 13) Uredospore stage of puccinia.
- 14) Mycorrhiza.
- 15) L.S. of Gemma Cup.
- 16) T.S. of Anthoceros thallus.
- 17) Types of sclereids.
- 18) Secretory tissues.

PART – C

C. Give a comprehensive account of **any three** of the following :

(3×10=30)

- 19) Economic importance of fungi in the field of medicine and agriculture.
- 20) Explain the symptoms, causal organism and control measures of Blast disease of Rice.
- 21) Explain :
 - a) Bacillus thuringiensis as Biopesticide
 - b) Grain smut of Sorghum
- 22) With the help of a neat labelled diagram, explain the L.S. of sporophyte of Marchantia.
- 23) With the help of a neat labelled diagram, explain anomalous secondary growth in *Dracaena* stem.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA



II Semester B.Sc. Examination, May/June 2018

(CBCS) (2014-15 and Onwards)

(Fresh + Repeaters)

BOTANY – II

Diversity of Non-Vascular Plant (Part – II)

Mycology, Plant Pathology, Bryophytes and Plant Anatomy

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer *all* questions.
2) Draw diagrams *wherever* necessary.

PART – A

A. Explain/Define **any ten** of the following in **two or three** sentences : (10×2=20)

- 1) What is Coenocytic mycelium ?
- 2) What are annual rings ?
- 3) What is systemic infection ? Give an example.
- 4) List the differences between dorsal and ventral surface of Marchantia thallus.
- 5) What is meristematic tissue ?
- 6) Mention the pathogen and any two symptoms of blast disease of rice.
- 7) Differentiate the apothecium of lichens from peziza.
- 8) Mention the components of xylem.
- 9) Name the sex organs in bryophytes.
- 10) Differentiate between collenchyma and sclerenchyma.
- 11) Name the causal organism and its reproductive structure of Red rot of sugarcane.
- 12) What is protonema ?

PART – B

B. Write critical notes on **any four** of the following : (4×5=20)

- 13) T. S. of Marchantia thallus.
- 14) Laticiferous secretory tissue.
- 15) Grain smut of sorghum.

P.T.O.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

SM – 385



- 16) Asexual reproduction in cercospora.
- 17) Parenchyma.
- 18) Alternation of generation in bryophytes.

PART – C

C. Give a comprehensive account of **any three** of the following : (3×10=30)

- 19) Give a detailed account of :
 - a) Koleroga
 - b) Neem as a biopesticide.
- 20) Secondary growth in dicot stem.
- 21) Explain the life cycle of Puccinia on Barberry.
- 22) Describe the structure of Funaria Sporophyte.
- 23) General characters of fungi.

RANJITH KUMAR H T

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

I B.Sc. II SEMESTER BOTANY-2 PREVIOUS YEARS QUESTION PAPER

II SEMESTER B.Sc EXAMINATION MAY/JUNE 2018
(CBCS) (2014-15 AND ONWARDS) (Fresh + Repeaters)

BOTANY II
DIVERSITY OF NON-VASCULAR PLANTS (PART II)
MYCOLOGY, PLANT PATHOLOGY, BRYOPHYTES AND PLANT ANATOMY

SCHEME OF VALUATION

TIME: 3Hrs

MARKS: 70

PART - A

A. EXPLAIN/DEFINE ANY TEN OF THE FOLLOWING IN TWO OR THREE SENTENCES: (10x2=20)

1. What is Coenocytic mycelium?

The aseptate, multinucleate mycelium is called coenocytic mycelium

2. What are annual rings?

Annual ring is the alternation of spring wood and autumn wood in a concentric circle on the trunk produced in a single year

3. What is systemic infection? Give an example.

Systemic infection is that which spreads from the point of infection to different parts of the plant. Eg; wilts/ smuts

4. List the differences between dorsal and ventral surface of *Marchantia* thallus.

Dorsal surface: (1) shows longitudinal median groove

(2) Presence of gemma cups

(3) Dark green in colour

(4) Presence of gametophores

Ventral surface: (1) presence of rhizoids

(2) Colourless

(3) Presence of scales

Any two each of the above

5. What is meristematic tissue?

Meristematic tissue is a group of cells that are in a constant state of division and present in the growth regions of the plant

6. Mention the pathogen and any two symptoms of blast disease of rice.

Pathogen: *Pyricularia oryzae*

Symptoms: (1) bluish green necrotic lesions with water soaked appearance on leaf blades

(2) The tissues of the nodes become black and shrunken

(3) Culms break at the nodes

(4) Spikes get infected exhibiting small circular brown lesions

Any two Symptoms

7. Differentiate the apothecium of Lichens from Peziza.

Lichens—presence of algal component, bicelled ascospores

Peziza—absence of algal component, unicelled ascospores

8. Mention the components of xylem.

Trachea, tracheid, xylem fibre, xylem parenchyma

9. Name the sex organs in bryophytes.

Male- antheridium, Female- archegonium

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

10. Differentiate between collenchyma and sclerenchyma.
 Collenchyma- living mechanical tissue, presence of pectin
 Sclerenchyma- dead mechanical tissue, presence of lignin
11. Name the causal organism and its reproductive structure of Red rot of sugarcane.
 Pathogen- *Colletotrichum falcatum*
 Reproductive structure- acervulus
12. What is protonema?
 It is a part of the gametophyte of moss plant that develops from a haploid spore

PART-B

B. WRITE CRITICAL NOTES ON ANY FOUR OF THE FOLLOWING:

(4X5=20)

13. T.S of Marchantia thallus.

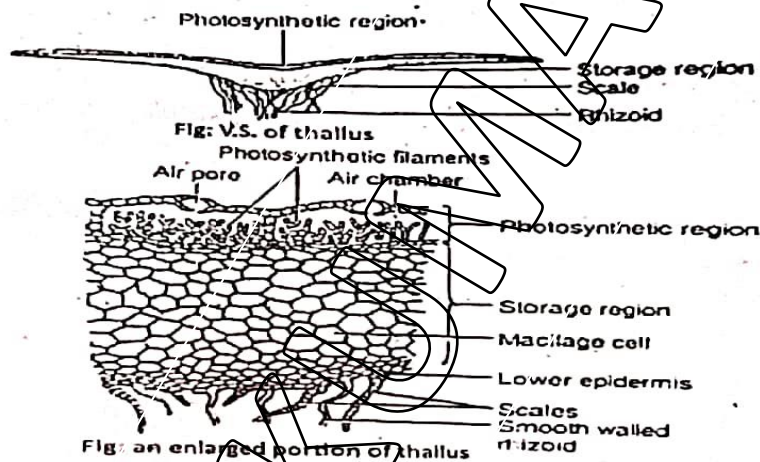


Diagram - 2 ½ marks
 Description - 2 ½ marks

14. Laticiferous Secretory tissue

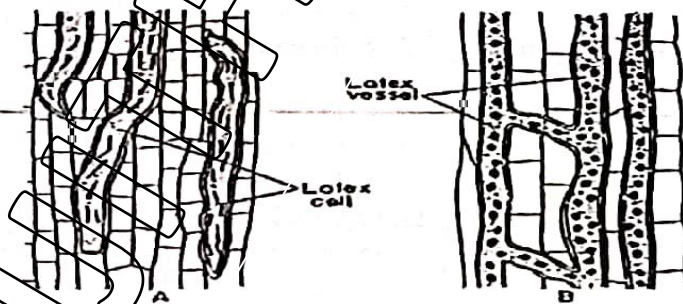


Fig. 4.3 : Laticiferous ducts in sectional view : (A) Non-articulate duct from *Euphorbia hirta*; (B) Articulate duct from *Carica papaya*

Definition - 1 mark
 Latex vessels: diagram-1 mark, description- 1 mark
 Latex cells: diagram-1 mark, description-1 mark

15. Grain smut of sorghum.

Pathogen - *Sphacelotheca sorghi* - 1 mark
 Symptoms - 2 marks
 Control - 2 marks

16. Asexual reproduction in *Cercospora*.

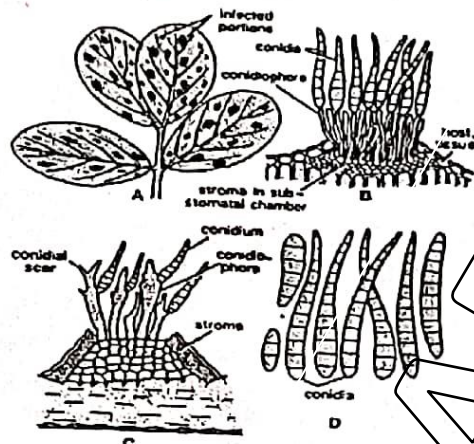


Fig. 1. (A-D). *Cercospora*. (A) Leaf spot disease of ground nut. (B) Conidiophore bearing conidia. (C) Longitudinal section of sclerite with gannulate conidiophores. (D) Conidia

Diagram- 2 marks
Explanation- 3 marks

17. Parenchyma

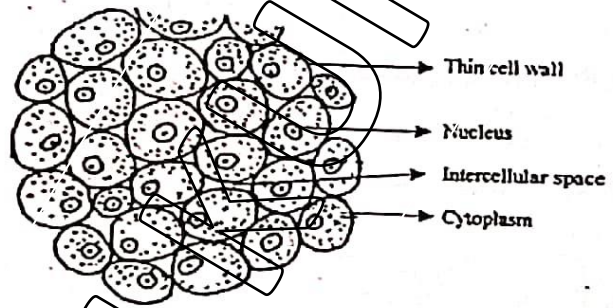


Fig. A typical parenchyma tissue

Diagram - 1 mark
Four points of explanation- 1 mark each

18. Alternation of generation in Bryophytes.

Definition- 1 mark
Explanation of gametophytic generation- 2 marks
Sporophytic generation - 2 marks

PART- C

C. GIVE A COMPREHENSIVE ACCOUNT OF ANY THREE OF THE FOLLOWING: (3X10=30)

19. Give a detailed account of:

- a) *Koleroga*
Pathogen - *Phytophthora palmivora*- 1 mark
Symptoms - 2 marks
Control - 2 marks
- b) Neem as a biopesticides
Any 5 points - 1 mark each

20. Secondary growth in dicot stem.

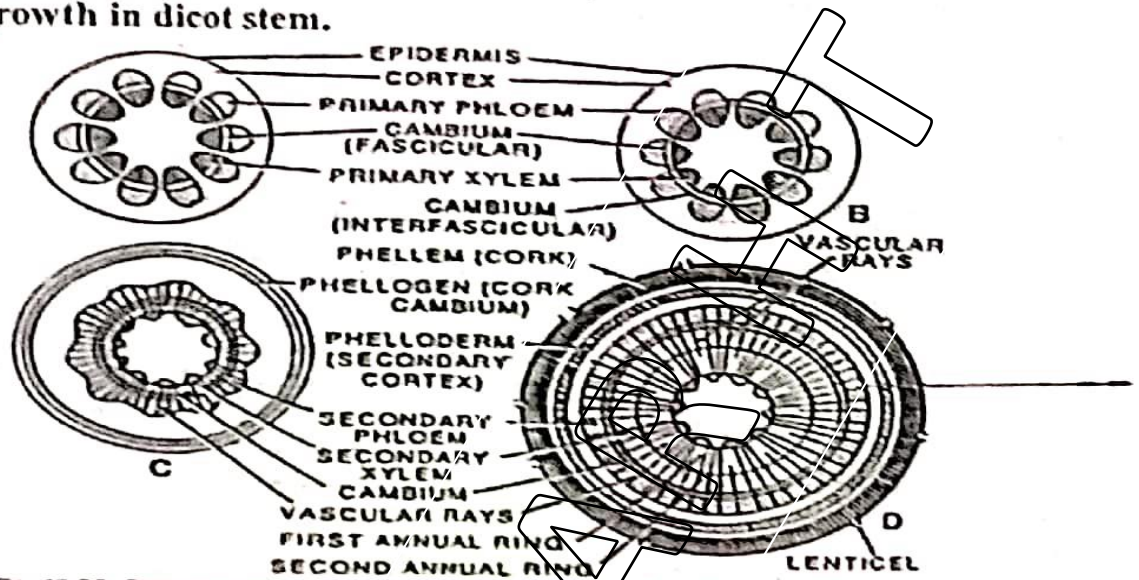


Fig. 40.36. Secondary growth in thickness. A - D, diagrams showing stages in the secondary growth of a dicotyledonous stem upto two years.

Labelled diagram - 5 marks

Explanation - 5 marks

21. Explain the life cycle of Puccinia on Barberry.

Peronial stage - diagram - 2½ marks

Aecial stage - diagram - 2½ marks

Formation and description - 2 ½ marks each

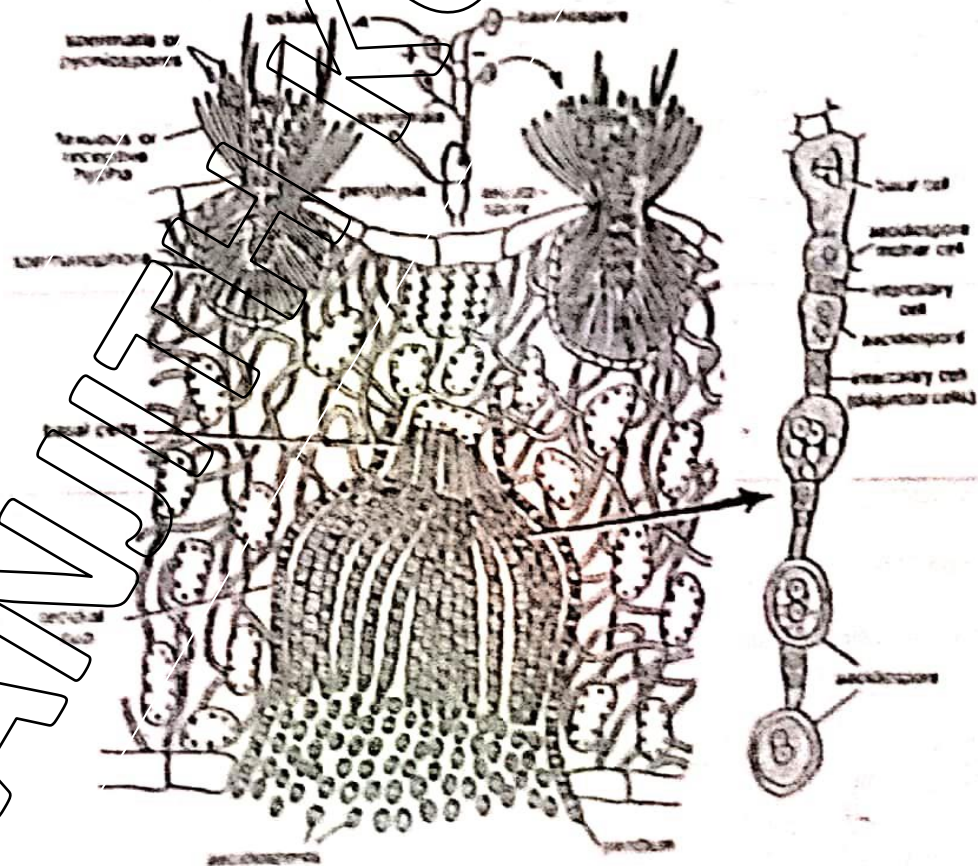


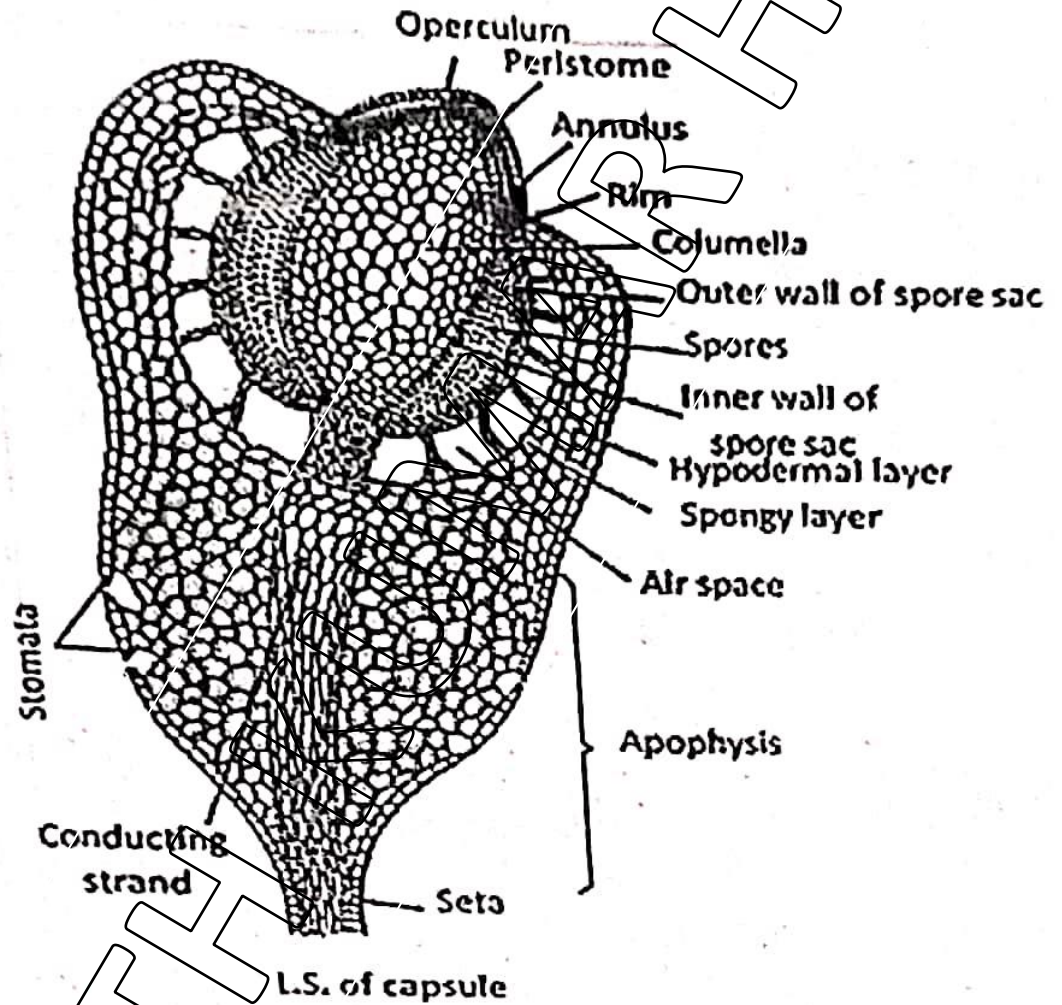
Fig. 7. Puccinia : Transverse section of Barberry through peronial and aecial cup

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

- 5 -

22. Describe the structure of Funaria Sporophyte.
Labelled diagram - 5 marks
Description - 5 marks



23. General characters of fungi.
Any ten characters - 1 mark each

- 03000300 -

RANJITH

61228

Second Semester B.Sc. Degree Examination, May/June 2019

(CBCS Scheme – Fresher)

Botany

Diversity of Non Vascular Plant – Part II

Paper II – MYCOLOGY, PLANT PATHOLOGY, BRYOPHYTE AND
PLANT ANATOMY

Time : 3 Hours]

[Max. Marks : 70

Instructions to Candidates : Answer all questions. Draw diagrams wherever necessary.

PART – A

Explain/Define any **TEN** of the following in two or three sentences : (10 × 2 = 20)

1. What is mycorrhiza? Mention its type.
2. Differentiate between chlorosis and necrosis.
3. What are rhizoids? Mention its types.
4. What are pseudoelasters? Give an example.
5. Differentiate between smut and rust.
6. Two symptoms of white rust.
7. Draw neat labelled diagram of gemmae cup.
8. Tunica Carpus theory.
9. What are Aerenchyma.
10. Write two elements of food conducting tissue.
11. Define mycelium.
12. Name any two biopesticides.

61228

PART - B

Write critical notes on any **FOUR** of the following :

(4 × 5 = 20)

13. Types of lichens.
14. Coffee rust.
15. T.S. Anthoceros thallus.
16. Secretary tissues.
17. General characters of bryophytes.
18. Uridinal stage of puccinia.

PART - C

Give a comprehensive account of any **THREE** of the following :

(3 × 10 = 30)

19. Life cycle of Albugo.
20. Write a note on :
 - (a) Blast disease of rice
 - (b) Red rot of sugarcane.
21. Describe sporophyte of Anthoceros.
22. Anomalous secondary growth in Dracaena.
23. Economic importance of fungi.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

I B.Sc. II SEMESTER BOTANY-2 PREVIOUS YEARS QUESTION PAPER

II SEMESTER B.Sc. EXAMINATION JUNE 2019

(CBCS) SCHEME - FRESH

BOTANY-II

DIVERSITY OF NON-VASCULAR PLANTS (PART-III)

PAPER-II: MYCOLOGY, PLANT PATHOLOGY, BRYOPHYTES AND PLANT ANATOMY

TIME: 3Hrs

SCHEME OF VALUATION

MARKS=70

PART-A

I. EXPLAIN/ DEFINE ANY TEN OF THE FOLLOWING IN TWO OR THREE SENTENCES
(10X2=20)

1. What is mycorrhiza? mention its types?

Ans. Symbiotic association between fungus and roots of higher plants.

a. ectomycorrhiza b. endomycorrhiza

2. Differentiate between chlorosis and necrosis

chlorosis	Necrosis
1. destruction or reduction of chlorophyll 2. It results in appearance of yellow spots	1. death of tissue occurs 2. results in appearance of brown spots called necrotic spots/lesions

3. What are rhizoids? Mention its types?

Ans. Rhizoids are short filamentous root like structures that performs the function of anchorage and absorption.

1. Smooth rhizoids 2. Tuberculate/pegged rhizoids

4. What are pseudo-elaters? give an example?

Ans. Elaters without thickening bands or spiral thickening are called Pseudo-elaters. These Pseudoelaters dry out, twist and help to loosen the spores and also helps in shedding of spores which lead to dispersal of spores.

Ex: Anthoceros

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

5. Differentiate between smut and rust?

Smut	Rust
1. Smut are autoecious	1. Rusts are heteroecious
2. smuts are intracellular and obtained their nutrition by means of haustoria	2. Rusts are intercellular and obtained their nutrition by means of haustoria
3. clamp connections on mycellum are common	3. Clamp connections on mycellium are rare
4. produces only one kind of binucleated spores	4. Dikaryotic mycellium produces three kinds of binucleated spores
5. symptoms includes formation of mass of soot like spores and infect plants	5. Symptoms are the development of spots or pustules bearing masses of powdery spores which are usually called rust.
6. develops from intercalary cell of mycellium	6. develops from terminal cell of mycellium

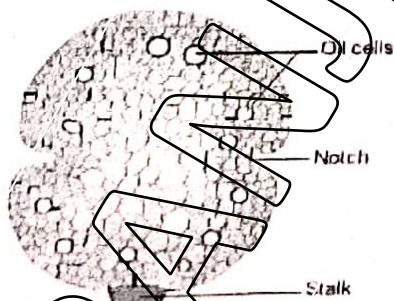
6. Two symptoms of white rust?

Ans. 1. it appears in the form of white pustules on the lower surface of the leaf but in severe condition it may spread on the upper surface of leaf

2. The infected parts become abnormal and abnormality is in the form of hypertrophy, fleshy and distortion.

3. Infected leaf become dwarf and thick and fleshy, flowers become sterile

7. Draw neat labeled diagram of gemma cup?



(A) A gemma enlarged

Figure 2.14 Vegetative reproduction in *Marchantia*

I B.Sc. II SEMESTER BOTANY-2 PREVIOUS YEARS QUESTION PAPER

8. Tunica corpus theory?

Ans. A concept of organization and development of apical meristem in which meristematic region differentiated into outer peripheral layer called as tunica and inner mass of cells called corpus.

9. What are aerenchyma

Ans. Parenchyma containing very large air spaces called aerenchyma, the air spaces in the form of large and small air chambers It is seen in stems and leaves of hydrophytes.

10. Write two elements of food conducting tissues?

Sieve tubes, companion cells, phloem fibres, phloem parenchyma

11. Define mycelium?

Ans. A plant body of fungi typically consists of branched filamentous hyphae which forms a net like structure called mycelium.

12. Name any two biopesticides?

Neem, trichoderma, Bacillus thuringensis

PART-B

WRITE CRITICAL NOTE ON ANY FOUR OF THE FOLLOWING 4X5=20

1. Types of lichens

Diagrams: 2 marks



Fig. 8.15. Lichens (a) leafy lichen. A. K. Chatterjee, *Chatterjee's Textbook of Botany*, 9th Edition, 2010, p. 100. (b) crustose lichen. A. K. Chatterjee, *Chatterjee's Textbook of Botany*, 9th Edition, 2010, p. 100.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

I B.Sc. II SEMESTER BOTANY-2 PREVIOUS YEARS QUESTION PAPER

1. **Crustose lichens:** The thallus is closely adhered to the substratum and provides a crust-like appearance.
Ex. *Graphis, haematomma, lecanora*
2. **Foliose lichens:** these lichens are flat with leaf like and lobed thallus they are attached to the substratum with the help of rhizoid like rhizins.
Ex. *Parmelia, physeia, peltigera*
3. **Fruticose lichens:** these are shrubby lichens with a well developed, shrub like, cylindrical and branched thallus. they grow erect or hang from the substratum.
Ex. *Alectonia, cladonia, letharia, usnia.*

2. Coffee rust

Pathogen: *Hemileia Vastatrix* - 1mark

2 Symptoms: 2marks

2 Controlling measures-2 marks

3. T.S. of Anthoceros thallus

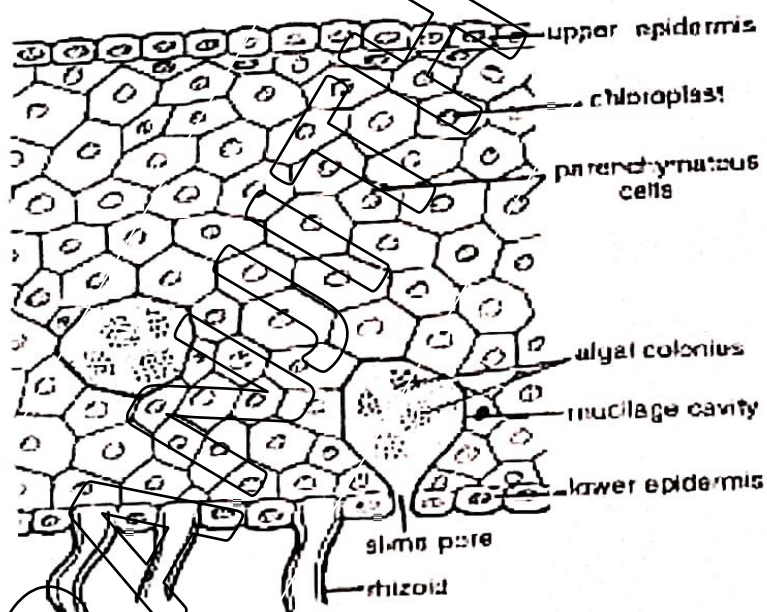


Diagram: 2marks

Explanation: 3marks

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

4. *Secretory tissues*

Diagrams: 2marks

Explanation: the tissues that concerned with secretion of gums, resins, volatile oils, nectar, latex and other substances in plants are called secretory tissues.

Divided into two groups:

1. laticiferous 2. Glandular tissues

Laticiferous : thin walled, elongated and much branched ducts containing milky or yellowish color juice/substances/liquids called latex.

They are of two types

1. Latex cells/non-articulate latex ducts 2. Latex vessels /articulate latex.

Glandular tissues: this tissue consists of special structures. These glands contain some secretory/excretory products such as gums, resins etc. they are of various types,

1. oil glands-secreting essential oils

2. mucilage secreting glands

3. special water secreting glands at the tip of veins

4. glandular hairs secreting gum like substances as in tobacco and plumbago

5. honey glands as in carnivorous plants (nectar glands)

5. *General characteristics of bryophytes*

1. bryophytes are called the amphibians of plant kingdom, grows on moist shady areas ensive mats, as cushions on walls rock and tree trunks.

2. They are very small the sporophyte and gametophyte have very different morphology (homomorphic generation) and the sporophyte is usually partly dependent on the gametophyte.

3. Photosynthetic, non-vascular plants. Plant body is either thalloid and thalli attached to substratum by hair like structures called rhizoids (true roots are absent) or is differentiated stem like, leaf like, true stems and leaves are lacking.

4. Bryophytes shows alternation of generations the haploid gametophyte alternates with the diploid sporophyte.

5. Gametophyte generation is dominant, conspicuous and independent. The female sex organ is the archegonia, the male sex organs are antheridia.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

I B.Sc. II SEMESTER BOTANY-2 PREVIOUS YEARS QUESTION PAPER

6. Although bryophytes are land plants, they are still depends upon water for fertilization, as the sperms swims in a water film.
7. Sporophyte is attached and dependent upon the gametophyte for nutrition i.e. parasitic on the gametophyte.
8. The diploid sporophyte usually consists of a basal foot, elevated seta and a term sporangium the capsule.
9. These plants lack specialized cells for transport of materials, absence of vascula limits bryophytes to moist habitat and small size.

6. Uredinal stage of puccinia?

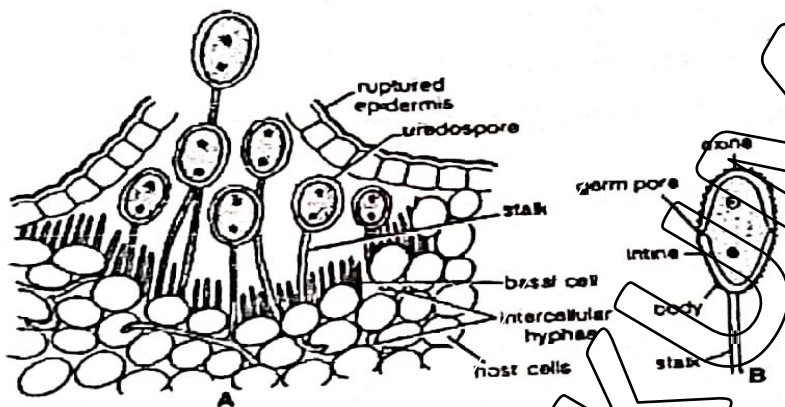


Fig. 4 (A-B). *Puccinia graminis* : T.S. wheat leaf passing through a uredosorus, (B) A uredospore

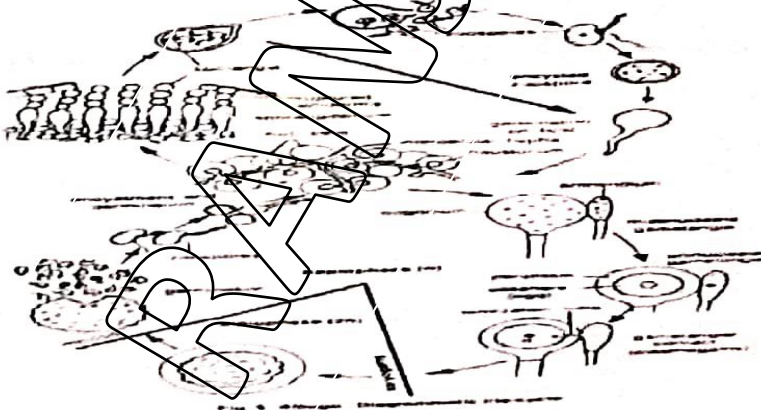
Diagram: 2 marks

Explanation: 3 marks

PART-C

C. GIVE A COMPREHENSIVE ACCOUNT OF ANY THREE OF THE FOLLOWING 3X10=30

1. Life cycle of *Aibugo*



RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA

Diagrams: 5 marks

Explanation: 5 marks

2. Write a note on,

a) Blast disease of rice

pathogen: 1 mark

symptoms: 2 marks

controlling measures: 1 mark

+ Diagram - 1

b) red rot of sugar cane

pathogen: 1 mark

symptoms: 2 marks

controlling measures: 2 marks

+ Diagram - 1

3. Describe the sporophyte of Anthoceros.

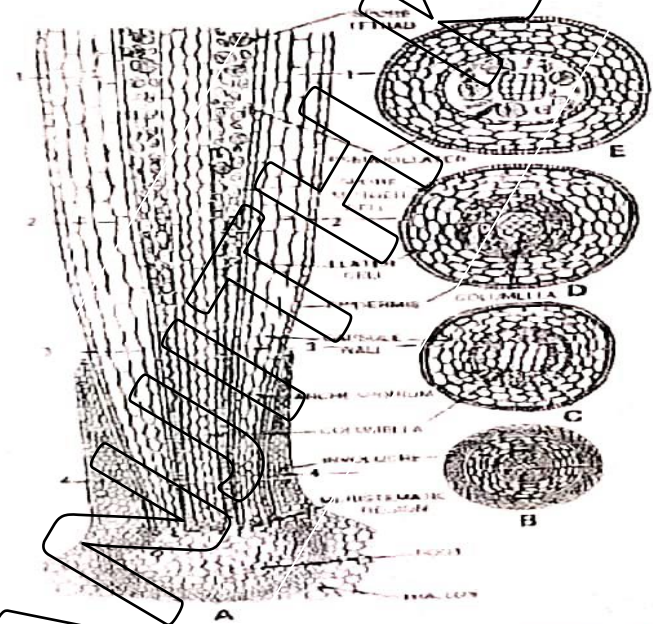
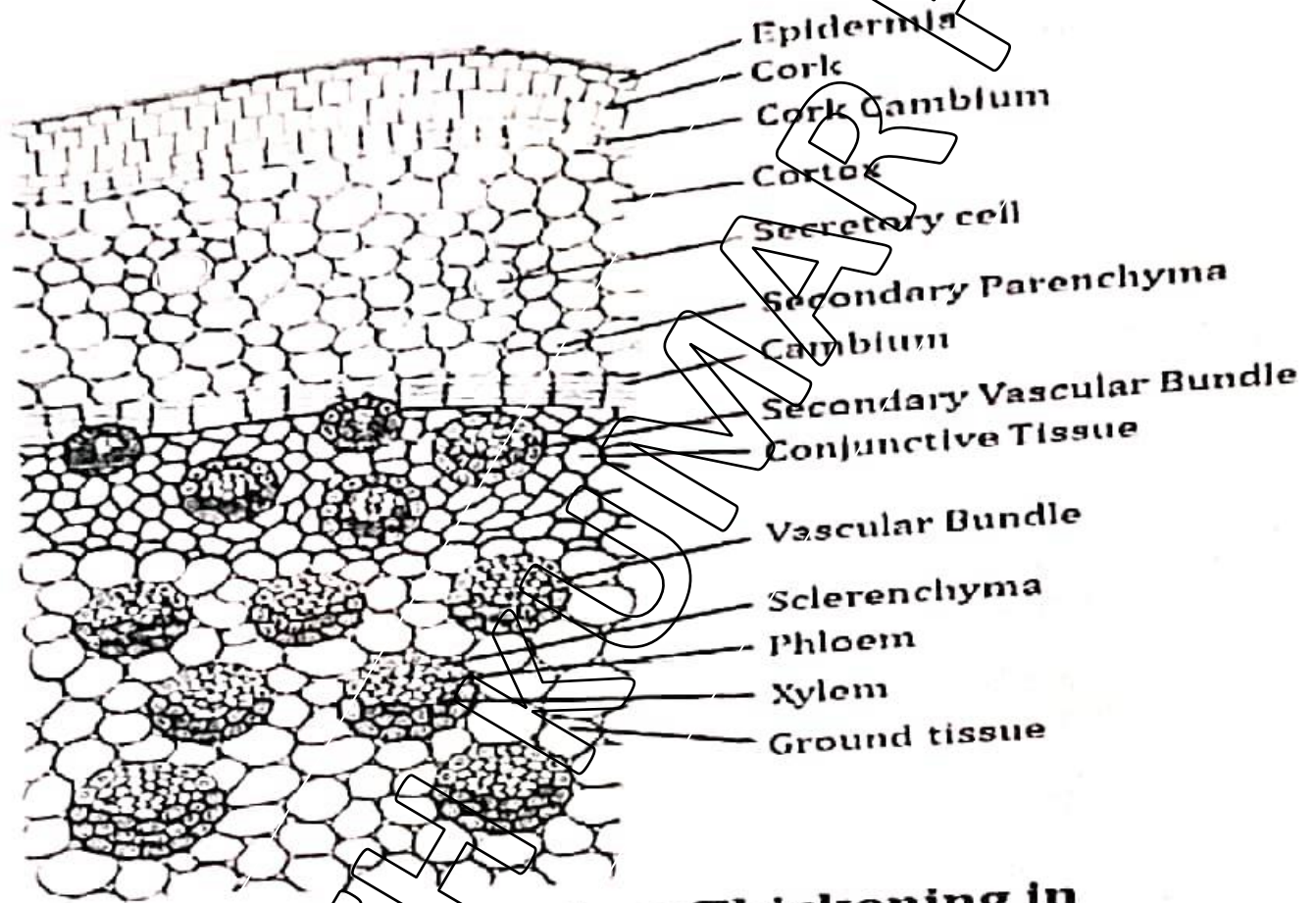


Fig. 24.10. Anthoceros sp. A. Longitudinal section of sporophyte; B. cross section of sporophyte (A) at 1-1; C. cross section of sporophyte (A) at 2-2; D. cross section of sporophyte (A) at 3-3; E. cross section of sporophyte (A) at 4-4.

Diagram: 5 marks

Explanation: 5 marks

4. Anomalous secondary growth in *Dracaena*.



Anomalous Secondary Thickening in *Dracaena* (Diagram)

Diagram: 5 marks

Explanation: 5 marks

5. Economic importance of fungi

I B.Sc. II SEMESTER BOTANY-2 PREVIOUS YEARS QUESTION PAPER

Fungi play an important role of nature; some of the economic importance's of fungi are as follows,

1. Fungi as a food: many fungi are edible and rich in proteins and vitamins.

Mushroom, morels and truffles they are quite rich in proteins and vitamins. On account of their nutritive value mushrooms are cultivated on commercial scale in several countries of the world.

2. Food Yeast: a large production of yeast is called microbial farming; food yeast contains vitamins such as thiamin, riboflavin, biotin etc.

3. Medical Value: a variety of metabolic products of fungi are of extremely medicinal use. Some of the important ones are as follows,

- a. Antibiotics: are substances synthesized by certain living organisms and have the capacity to inhibit the metabolic activities of other organisms. Such as, penicillin isolated from *penicillium notatum*.
- b. Ephedrine: it is synthesized by yeast from benzaldehyde and used against asthma and nasal troubles.

4. Role in Agriculture: many fungi live saprophytically on dead organic matter. They cause decay and decomposition of dead bodies of plants and animals breaking up the complex organic compounds by secreting enzymes. Soil fungi absorb many inorganic salts. These are thus prevented from being lost from the soil by leaching some fungi from mycorrhizal association with the roots of higher plants, especially gymnosperms and help them in their nutrition such plants will grow satisfactorily only when the mycelium of the appropriate fungal partner is present in soil.

5. Role in Industry: fungi form the basis of many important industries like bakery, brewery. Preparation of cheese and industries concerned with the production of organic acids, vitamins, pigments and certain chemical substances.

Alcoholic fermentation: fermentation of sugar solution by yeast produced ethyl alcohol and carbon dioxide in brewery or wine making industry, alcohol is the important product. Yeast provides fermentation and cause the sponginess of bread.

Many acids have been synthesized from fungi are as follows:

- a. Gallic acid: *Penicillium glaucum* and *aspergillus gallomyces*.
- b. Citric acid: Molasses by using *citromyces pfefferianus* and *mucor* sps.
- c. Amylase: *aspergillus oryzae*
- d. Invertase: *saccharomyces cerevisiae*.

RANJITH KUMAR H T

ASST. PROFESSOR, B.G.S SCIENCE ACADEMY, CHIKKABALLAPURA