



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : First Semester : Paper – I

ALGAE AND BRYOPHYTES

Under CBCS – Credit 4

Time: **3** Hours

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

- The prokaryotic nature of cells are found in
 - Charophyceae
 - Cyanophyceae
 - Rhodophyceae
 - Chlorophyceae
- _____ occurs as reserve food in the cells of Bacillariophyceae.
 - Fat
 - Carbohydrate
 - Protein
 - Glucose
- Fertile branches of *Sargassum* are called
 - Conceptacle
 - Leaf
 - Receptacle
 - Paraphyses
- The structure which helps in dehiscence of spores in *Marchantia* is
 - Capsule
 - Foot
 - Seta
 - Elaters
- In *Funaria*, the leaves surrounding archegonia are called
 - Perichaetial leaves
 - Paraphyses
 - Periphyses
 - Perigonial leaves
- The plant body of bryophytes represents _____ generation.
- In *Oedogonium*, antheridia are produced by dwarf male filaments called _____.
- The specialised thick walled cell present in *Nostoc* is called _____.
- In *Anthoceros*, sporophyte is differentiated in to _____.
- The peristome in the capsule of *Funaria* regulates _____.

SECTION – B

Answer ALL Questions:

(5 × 7 = 35)

- Mention the role of algae in Industries, Medicine and Agriculture.

(OR)

 - Write a short note on pigmentation, reserved food and flagellation of Phaeophyceae.
- Describe the asexual reproduction in *Vaucheria*.

(OR)

 - Describe the structure of any two types of Diatoms.
- Write a short note on external and internal structure of the thallus of *Sargassum*.

(OR)

 - Describe the structure and reproduction of *Nostoc*.
- Describe the sporophyte of *Marchantia*.

(OR)

 - Describe the internal structure of thallus of *Anthoceros* and add a note on vegetative reproduction.
- Explain the archegoniophore of *Funaria* and structure of mature archegonium.

(OR)

 - Discuss the dehiscence and dispersal of spores in *Funaria* capsule.

SECTION – C

Answer any THREE Questions:

(3 × 10 = 30)

- Write the classification of algae given by Fritsch.
- Describe the methods of formation of auxospores in Pennales diatoms.
- Discuss the post fertilization changes in *Polysiphonia*.
- Explain the antheridiophore and archegoniophore of *Marchantia* and structure of antheridium and archegonium.
- Explain the sporophyte of *Funaria* with the help of a labeled diagram.




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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : First Semester : Paper – II

FUNGI AND PLANT PATHOLOGY

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions :

(10 × 1 = 10)

- Presence of plasmodium is the characteristic feature of this class of fungi
 - Zygomycetes
 - Myxomycetes
 - Basidiomycetes
 - Ascomycetes
- The mycelium of *Albugo* is
 - septate and uninucleate
 - septate and multinucleate
 - aseptate and uninucleate
 - aseptate and multinucleate
- Binucleated spores of *Puccinia* released from barberry leaf and responsible for initial infection in a wheat plant are termed as
 - Aeciospores
 - Basidiospore
 - Uredospore
 - Pycnidiospores
- Litmus dye is obtained from
 - Parmelia*
 - Usnea*
 - Rocella montaignei*
 - Lobaria pulmonaria*
- Little leaf of Brinjal is caused by
 - Algae
 - Mycoplasma
 - Fungi
 - Virus
- All fungi are _____ in their mode of nutrition.
- The fruiting body of *Penicillium* is a round and closed structure called _____.
- When two host species are required to complete a parasitic life, this is known as _____.
- _____ is an example of fruticose lichen.
- Blast of rice is caused by _____.

SECTION – B
Answer ALL Questions :

(5 × 7 = 35)

- Discuss the classification of Fungi based on Alexopoulos and Mims.
(OR)
 - Enumerate the harmful effects of fungi on plant, human and food.
- Write a brief account on structure and reproduction of *Stemonites*.
(OR)
 - Explain the asexual reproduction in *Albugo* with suitable diagram.
- Describe the structure of the basidiocarp of *Agaricus* and give the development of the basidium.
(OR)
 - Discuss the structure of mycelium and asexual reproduction in Deuteromycetes.
- Explain the internal structure of lichen with suitable diagram.
(OR)
 - Give an account of economic importance of lichens.
- Write an account on causal organism, symptom, transmission and control measures of bunchy top of banana.
(OR)
 - Discuss the symptom and control measures of blast disease of rice.

SECTION – C
Answer any THREE Questions :

(3 × 10 = 30)

- Write an essay on beneficial role of fungi.
- Describe the sexual reproduction of *Penicillium*.
- Explain the life cycle of *Puccinia* on barberry plant.
- Discuss asexual reproduction in lichens and give the structure of apothecium.
- Explain the symptom, causes and control measures of citrus canker.





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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : Third Semester : Paper – I

BIOCHEMISTRY, BIOPHYSICS & BIOMETRICS

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions: (10 × 1 = 10)

- Carbohydrates are generally composed of _____ elements.
 - Carbon
 - Hydrogen
 - Oxygen
 - All the above
- _____ saccharides are sweet in taste.
- The primary structure of protein represents.
 - Linear sequence of amino acids joined by peptide bond
 - 3 – dimensional structure of protein
 - Helical structure of protein
 - Sub unit of structure of protein
- _____ amino acid is a α -helix terminator.
- The lowering of the activation of energy of a reaction is called
 - Enthalpy
 - Entropy
 - Activation
 - Catalysis
- The stored energy is called _____ energy.
- Chlorophylls are soluble in
 - organic solvents
 - inorganic solvents
 - organic solutes
 - inorganic solutes
- Yellowing of plants is due to absence _____.
- Flower colour is a _____ variable.
- Find the mode in the following data set (11, 12, 13, 14, 14)
 - 11
 - 12.8
 - 13
 - 14

SECTION – B

Answer ALL Questions: (5 × 7 = 35)

- State any two functions of carbohydrate. (OR)
 - Write the structural formula of the glucose and fructose.
- Describe the structure of DNA with figure. (OR)
 - Write short notes on structure of proteins.
- Write note on law of thermodynamics. (OR)
 - Which organelle is known as power house of cell?
- Write short notes on light and plant pigment. (OR)
 - Write note on bioluminescence.
- Define enzymes. Describe the classification of enzymes. (OR)
 - Write the calculation of mean, median, mode (plant height 12m, 13, 14, 15, 18, 19, 14 & plant weight 20kg, 30, 50, 80, 70, 89, 58, 95)

SECTION – C

Answer any THREE Questions: (3 × 10 = 30)

- Describe the different types of RNA with illustration.
- Briefly explain the structure and functions of proteins.
- Write briefly with illustrated figure on mitochondria and chloroplast bioenergetics.
- Describe physical phenomena of fluorescence and phosphorescence.
- Find mean, median and standard deviation from the following data :

CI	0-4	4-8	8-12	12-16	16-20	20-24	24-28	28-32
Frequency	08	09	12	07	05	04	03	02




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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : Third Semester : Paper – II

BIOINFORMATICS

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions:

(10 × 1 = 10)

- Which of the following is an output device?
a) Mouse b) Keyboard c) Pen drive d) Printer
- WWW means
a) world wide web b) world wide website
c) world wide website d) all of these
- Which one of the following is not an example for pairwise alignment method?
a) Dot matrix b) Progressive method
c) Dynamic programming d) Word method
- The enzyme used for the manipulation of DNA in PCR is
a) Endonuclease b) Taq polymerase
c) Isomerise d) Replicase
- The 3-D structure of proteins can be studied by
a) UV-Spectroscopy b) Light microscope
c) Gas Chromatography d) X-ray crystallography
- Windows is a _____ system.
- The letter 'L' in BLAST stands for _____.
- The matching of homologous positions in two sequences is _____ alignment.
- The circular DNA present in bacteria is _____.
- _____ is the entire set of proteins in a genome.

SECTION – B
Answer ALL Questions:

(5 × 7 = 35)

- a) Explain different components of a computer.
 (OR)
 b) What are the applications of computers in Biology?
- a) Write short notes on internet and its uses.
 (OR)
 b) Give an account on PDB Retriever.
- a) write a brief notes on BLAST search tools.
 (OR)
 b) Write notes on FASTA.
- a) Describe multiple sequence alignment.
 (OR)
 b) Differentiate prokaryotic genome from eukaryotic genome.
- a) Give an introduction to Proteomics.
 (OR)
 b) Define in one or two lines.
 1) Peptide 2) Proteome 3) Proteomics 4) PROCAT 5) PIR
 6) SWISS- PROT and 7) PROSITE

SECTION – C
Answer any THREE Questions:

(3 × 10 = 30)

- Explain the construction of different types of graphs.
- Give a detailed account on NCBI.
- Explain the construction of phylogenetic tree.
- Write in detail about PCR technique.
- Write an essay on Proteome analysis.




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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : Fifth Semester : Paper – I

TAXONOMY OF ANGIOSPERMS & ECONOMIC BOTANY

Under CBCS – Credit 4

 Time: **3 Hours**

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

- Classification given by Bentham & Hooker is
 - Artificial
 - Natural
 - Numerical
 - Phylogenetic
- One of the best methods for understanding general relationships of plants is
 - Cytotaxonomy
 - Experimental taxonomy
 - Numerical taxonomy
 - Chemotaxonomy
- Which is incorrect for family Rutaceae?
 - Exstipulate
 - Pedicillate
 - Perigynous
 - Syncarpous
- Major food crops of the world belongs to the family
 - Leguminaceae
 - Solanaceae
 - Lamiaceae
 - Poaceae
- Coir of commerce comes from which part of Coconut?
 - Epicarp
 - Mesocarp
 - Seed coat
 - Endocarp
- Artificial systems of plant classification was proposed by _____.
- α -taxonomy deals with _____.
- Number of sepals in family Cucurbitaceae is _____.
- Fruit in family Lamiaceae is _____.
- The chicory powder which is mixed with coffee powder is obtained from _____.

SECTION – B
Answer ALL Questions:
(5 × 7 = 35)

- Write the merits and demerits of the Bentham and Hookers system of classification.
(OR)
b) Describe the Engler and Prantl classification.
- Write the importance of herbarium.
(OR)
b) Explain modern trends in chemotaxonomy.
- Write short notes on important features of capparidaceae with plant systematic.
(OR)
b) Define economic importance of Cucurbitaceae and rutaceae with examples.
- Describe distinguishing features and floral diagram and floral formula in caesalpinaceae.
(OR)
b) Describe the floral diagram and floral formula in lamiaceae.
- Write short note on fibres and fibre yielding plants with example.
(OR)
b) Write economic importance of spices and condiments with examples.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

- Describe in detail the principles and classification of Bentham and Hooker.
- Define numerical taxonomy and what its applications in modern taxonomic studies.
- Compare the floral features of the families Meliaceae and Mimosaceae based on recent systems of classification.
- Define distinguishing features and economic importance of following families. Rubiaceae, Orchidaceae and Poaceae.
- Write on briefly explain in processing and extraction of sugar & tea.




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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : Fifth Semester : Paper – II

GENETICS

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions:

(10 × 1 = 10)

- The law of segregation was proposed by
 - Johanssen
 - Muller
 - Mendel
 - Bateson
- The number of alleles that determine human blood group is
 - 4
 - 3
 - 5
 - 2
- The sex linked inheritance was studied in detail by
 - Mendel
 - Morgan
 - Muller
 - Castle
- Which one of the followings is not common in mutation?
 - Deletion
 - Duplication
 - Linkage
 - Reversion
- The structural genes Z, Y and A are found in
 - Galactose Operon
 - Lactose Operon
 - Tryptophan Operon
 - All of these
- In monohybrid cross the genotypic ratio of F₂ generation is_____.
- _____ proposed the copy choice theory.
- The failure of plants to produce functional male gametes is_____.
- _____ is an agent that causes mutation.
- The Human Genome Project was started in the year_____.

SECTION – B
Answer ALL Questions:

(5 × 7 = 35)

- Explain incomplete dominance with a suitable example.
(OR)
 - Explain recessive epistasis.
- Describe the role of multiple alleles in determining human blood groups.
(OR)
 - Give an account of incomplete linkage with example.
- What is sex linked inheritance? Elaborate with an example.
(OR)
 - Write notes on cytoplasmic inheritance.
- Give an account on chemical mutagens.
(OR)
 - Write short notes on physical mutagens.
- What is Human Genome Project? List out the outcome of the project.
(OR)
 - Explain the negative regulation of prokaryotic genome.

SECTION – C
Answer any THREE Questions:

(3 × 10 = 30)

- Explain various laws of inheritance described by Mendel.
- Explain various theories of crossing over.
- What is male sterility? How does it occur in maize?
- Give a detailed note on the types of mutations.
- Explain Tryptophan Operon.





08CT53

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B.Sc. Botany Degree (Semester) Examinations, November 2017
Part – III : Core Subject : Fifth Semester : Paper – III

MICROBIOLOGY

Under CBCS – Credit 3

Time: **3 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

1. The most commonly used differential medium
 - a) Blood agar b) Minimal c) Enriched d) Essential
2. Which one of the following synthesizes food using inorganic substance
 - a) Amoeba b) Euglena c) Ebola d) Obelia
3. Homo fermentive species produce
 - a) Lactic Acid b) HCl c) Alcohol d) Citric Acid
4. Mφ is the symbol of
 - a) Macrophages b) Microphages c) Holophage d) Hetero phage
5. Tonsils contain
 - a) Lymphocytes b) Mφ c) Granulocytes d) All the above
6. _____ include prokaryotes which lack injective mode of nutrition.
7. The nuclear material that is not surrounded by a nuclear membrane is called _____.
8. Membrane filters are made up of _____.
9. Sudden heating and sudden cooling of milk is called _____.
10. When a natural product is used for growing bacteria, the medium is called _____.

SECTION – B

Answer ALL Questions:

(5 × 7 = 35)

11. a) List out the characteristic features of bacteria.

(OR)

b) Write a short note on vegetative reproduction of yeast.
12. a) Give a short note on pasteurization.

(OR)

b) Explain autoclave with neat diagram.
13. a) Explain Pour plate technique with a neat illustration.

(OR)

b) Write notes on differential medium and its uses.
14. a) Explore the characters of purple bacteria and add a note on its metabolism.

(OR)

b) List out the application of ethanol.
15. a) Give a note on bursa fabricius with neat diagram.

(OR)

b) What is an antigen? How it works as potent immunogen.

SECTION – C

Answer any THREE Questions:

(3 × 10 = 30)

16. Write an essay on the structure of bacteria with suitable diagram.
17. Explain in detail about heat sterilization.
18. Describe the growth curve of bacterial culture with neat illustration.
19. Write a detail account on lactic acid production and its significance.
20. Explain antigen and antibody reaction with suitable illustration.





08EP51

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B.Sc. Botany Degree (Semester) Examinations, November 2017
Part – III : Elective Subject : Fifth Semester : Paper – I

MEDICINAL BOTANY
Under CBCS – Credit 4

Time: **3 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions : (10 × 1 = 10)

1. Study of plant medicinal drugs is called
 - a) Biotechnology
 - b) Gentics
 - c) Pharmacognosy
 - d) Pharmacology
2. The compounds that are directly involved in the growth and development of plants are called
 - a) Secondary metabolites
 - b) Primary metabolites
 - c) Enzymes
 - d) Resins
3. Which is the medicinal part of *Cassia senna*?
 - a) Stem
 - b) Root
 - c) Leaves
 - d) Flower
4. What is the common name of *Withania somnifera*?
 - a) Cannonball
 - b) Zinger
 - c) Ashwagandha
 - d) Rose
5. *Santalum album* belongs to the family
 - a) Fabaceae
 - b) Santalaceae
 - c) Rubiaceae
 - d) Malvaceae

Fill in the blanks:

6. Father of Siddha medicine _____.
7. *Aloe Vera* belongs to the family _____.
8. The nitrogenous organic compounds of plants are called _____.
9. The family of *Cinnamomum zeylanicum* _____.
10. *Carthamus tinctorius* has been cultivated mainly for _____.

SECTION – B

Answer ALL Questions : (5 × 7 = 35)

11. a) Explain indigenous system of Ayurvedha medicine.
(OR)
b) Write a note on Taxonomical crude drugs.
12. a) Write a short note and medicinal uses of alkaloids.
(OR)
b) Classify the tannis and give its properties.
13. a) Write any one method of drug evaluation.
(OR)
b) Write a short note on drying of crude drugs.
14. a) Write about the morphological and medicinal uses of *Cassia senna*.
(OR)
b) Explain how *Aegle marmelos* is used as medicines?
15. a) Give a detail note on the cultivation of *Withania somnifera*.
(OR)
b) Briefly explain the harvesting and uses of *Emblica officinalis*.

SECTION – C

Answer any THREE Questions : (3 × 10 = 30)

16. Explain pharmacological studies of crude drugs.
17. Discuss on plant secondary metabolites and its importance in pharmaceutical area.
18. Explain the types of drug adulterants.
19. Describe botanical name, morphological and medicinal uses of *Zingiber officinale*.
20. Discuss about family, chemical constituents processing and uses of *Aloe vera*.




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B.A./B.Sc. Degree (Semester) Examinations, November 2017

Part – IV : NME Subject : First Semester : Paper – I

ENERGY RESOURCES

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

1. Bio-mass energy is
 - a) Oil
 - b) Biogas
 - c) Nuclear energy
 - d) Coal
2. Anthracite is commonly known as
 - a) Hard coal
 - b) Brown coal
 - c) Red coal
 - d) All
3. Major constituent of LPG
 - a) CO₂
 - b) CH₃
 - c) H₂S
 - d) CO
4. How many Thermal power stations are present in Tamil Nadu?
 - a) 4
 - b) 2
 - c) 5
 - d) 6
5. The headquarters of OPEC is
 - a) Vienna
 - b) Saudi Arabia
 - c) Kuwait
 - d) Qatar
6. Hydro Power.
7. Mercaptan.
8. Define Energy.
9. Lignite.
10. Methanogens.

SECTION – B
Answer ALL Questions:
(4 × 10 = 40)

- 11.a) Discuss - World energy Scenario.
(OR)
b) What are renewable energy resources? Add on its example.
- 12.a) List out the advantages of solar energy
(OR)
b) Define Coal. Give its various example.
- 13.a) Give an account of merits and demerits of wind energy?
(OR)
b) What is natural oil? How to separate its fraction?
- 14.a) Note on tidal power.
(OR)
b) Write an account of harvesting methods of wind energy?

SECTION – C
Answer any TWO Questions:
(2 × 12½ = 25)

15. Define biogas. How to harvest biogas?
16. Write an essay about nuclear energy.
17. Give an account of biodiesel and its producing Plants.




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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – IV : Skill Based Subject : Third Semester : Paper – I

BIOINSTRUMENTATION

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

- The cellular components are magnified with this
 - Microscope
 - Micrometry
 - Micrometer
 - Mirotube
- Electron microscope was discovered by
 - Knoll & Ruska
 - Anton
 - Boston
 - Wilson
- In pH meter, the glass electrode contains
 - Silver wire
 - silver chloride
 - HCl
 - All
- Centrifuge works based on the principles of _____ force
 - centrifugal
 - centripetal
 - both
 - none
- In Thin Layer Chromatography (TLC) the glass slide is coated with
 - silica gel
 - sand
 - glass
 - wood
- Stage Micrometer.
- pH Scale.
- Partition coefficient.
- Centrifugation.
- Electrophoresis.

SECTION – B
Answer ALL Questions:
(4 × 10 = 40)

- Give an account about Compound microscope.

(OR)

 - Write about Scanning Electron Microscope (SEM).
- Write about the applications of Colorimeter.

(OR)

 - Explain the principle and applications of pH meter.
- Mention various applications of centrifuge.

(OR)

 - Give the principles and types of centrifuges.
- Write notes on column chromatography.

(OR)

 - Explain the principle and types of electrophoresis.

SECTION – C
Answer any TWO Questions:
(2 × 12½ = 25)

- Give an account about Transmission Electron Microscope (TEM).
- Write about the principle and applications of Colorimeter.
- Write an essay on Paper Chromatography.




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B.Sc. Botany Degree (Semester) Examinations, November 2017

Part – IV : Skill Based Subject : Fifth Semester : Paper – I

MUSHROOM CULTIVATION

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

1. The Commonly cultivated mushroom is
 - a) *Pleurotus* b) *Amanita* c) Both d) None
2. The most common poisonous mushroom
 - a) *Amanita* b) *Pleurotus* c) *Agaricus* d) *Volvariella*
3. Mushroom training is normally given in _____ institutions.
 - a) Agriculture b) Arts c) Law d) Commerce
4. The best source of spawn preparation is
 - a) seeds of sorgham (b) rice (c) husk (d) gram
5. Mushroom Fly is commonly called as
 - a) Phorids b) Aphids c) Both d) none
6. Biopesticide.
7. Edible mushroom.
8. Mother spawn.
9. Harvesting mushroom.
10. Growth media.

SECTION – B
Answer ALL Questions:
(4 × 10 = 40)

- 11.a) Give an account about importance of mushroom.

(OR)

- b) Write about Structure of Basidiocarp.

- 12.a) Explain the life cycle of *Pleurotus*.

(OR)

- b) Draw the life cycle of *Agaricus*.

- 13.a) Mention various growth media (PDA).

(OR)

- b) Give the Nutritional values of mushroom.

- 14.a) Write notes on Mushroom soup.

(OR)

- b) How will you control the pests and diseases in mushroom?

SECTION – C
Answer any TWO Questions:
(2 × 12½ = 25)

15. Give an account about isolation and pure culture for production of mushroom.
16. Write about a detailed account on mass cultivation of mushroom.
17. Write an essay on mushroom recipes (Any Three).




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M.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : First Semester : Paper – I

PLANT DIVERSITY - I

Under CBCS – Credit 4

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 2 = 20)

1. Comment on terrestrial algae.
2. Differentiate akinate and Zoospore.
3. Enlist any two characters of Bacillariophyceae.
4. Define SCP .
5. Comment on symbionts.
6. What is meant by heterothallism?
7. Comment on *Colletotrichum*.
8. Enlist any two ecological significance of lichens.
9. Comment on gemma.
10. Mention any two characters of *Anthroceros*.

SECTION – B
Answer ALL Questions:
(5 × 5 = 25)

- 11.a) Give an account of the thallus organisation in algae.
(OR)
b) Write an illustrated account of mode of sexual reproduction in algae.

- 12.a) Compare and contrast the salient features of cyanophyceae and chlorophyceae. (OR)
b) Give a detailed illustrated account of the reproductive structures of *Sargassum*.
- 13.a) Enumerate the important stages of parasexuality of reproduction. (OR)
b) Give an account on economic importance of fungi.
- 14.a) Describe the vegetative and asexual reproduction in *Rhizopus*. (OR)
b) Describe the form and types of lichens.
- 15.a) Describe the internal thallus structure of *Marchantia*. (OR)
b) Give an account on the gametophyte of *Pogonatum*.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Write an essay on the economic importance of algae.
17. Give the structure and reproduction in *Gracillaria*.
18. Outline the classification of fungi by Alexopolus.
19. Describe the structure and mode of reproduction in lichens.
20. Give an illustrated account on the mature sporophyte in *Polytrichum*.




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M.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : First Semester : Paper – II

PLANT DIVERSITY - II

Under CBCS – Credit 4

 Time: **3 Hours**

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 2 = 20)

1. Comment on circinate vernation.
2. Define protostele .
3. Comment on ligule.
4. Enlist any two characters in maiden hair fern.
5. Differentiate manoxylic and pinoxylic wood.
6. Mention any two economic importances of gymnosperms.
7. Distinguish between ovuliferous and bract scale.
8. Comment on coralloid root.
9. Comment on Paleozoic era.
10. Name any two fossil gymnosperms.

SECTION – B
Answer ALL Questions:
(5 × 5 = 25)

- 11.a) Explain the general characters of pteridophytes.

(OR)

- b) Give an account on telome theory.

- 12.a) Give an illustrated account of the sporophyte of *Selaginella*.

(OR)

- b) Describe the morphology and anatomy of *Equisetum* stem.

- 13.a) Enumerate important diagnostic features of various groups of gymnosperms.

(OR)

- b) Give an account on affinities of gymnosperms with pteridophytes.

- 14.a) Describe the morphological nature of *Pinus*.

(OR)

- b) Describe the structure of female gametophyte in *Gnetum*.

- 15.a) Describe the morphological structure and anatomy of *Rhynia*.

(OR)

- b) Give an account on *Lyginopteris*.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Describe various types of steles found in pteridophytes studied by you.
17. Describe the structure of *Marsilea* sporocarp with the help of diagrams.
18. Outline the classification of gymnosperms.
19. Give an account on the life cycle of *Cycas*
20. Give a brief description of the origin and evolution of different plant groups with the help of geological time scale.




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M.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Core Subject : First Semester : Paper – III

TAXONOMY OF ANGIOSPERMS

Under CBCS – Credit 4

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 2 = 20)

1. What is plant taxonomy?
2. Define phylogeny in taxonomy.
3. Describe the Palynology.
4. Mention the methods of herbarium preparation.
5. Write a note on author citation in plant taxonomy.
6. What is choice and rejection of names in plant taxonomy?
7. Brief the floral structure of Rhamnaceae.
8. List out the economic importance of Ranunculaceae.
9. Write down the floral structure of Loranthaceae.
10. Write down the four important use of Verbenaceae.

SECTION – B
Answer ALL Questions:
(5 × 5 = 25)

11. a) Discuss the merits and demerits of Engler and Prantl system of classification.

(OR)

- b) Briefly explain the phylogeny of angiosperms.

12. a) Give a concise account on Chemotaxonomy.

(OR)

- b) Describe Numerical taxonomy.

13. a) Give brief note on the general rules for the construction of keys.

(OR)

- b) Briefly explain plant nomenclature.

14. a) Narrate the floral characteristics of Vitaceae.

(OR)

- b) Enlist the importance of Magnoliaceae.

15. a) Explain the floral features of Cyperaceae.

(OR)

- b) Write a concise account on economic importance of Euphorbiaceae.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Write an essay on Bentham and Hooker system of classification.
17. Give a detailed account on Palynology.
18. Describe the methods of plant identification.
19. Write an essay of economic importance of Sapotaceae.
20. Give an account of Commelinaceae.




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M.Sc. Botany Degree (Semester) Examinations, November 2017

Part – III : Elective Subject : First Semester : Paper – I

BIOFERTILIZERS

Under CBCS – Credit 5

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 2 = 20)

1. Mention the types of biofertilizers.
2. What is an endophyte?
3. Define ammonification.
4. Comment on Nitrogen fixation.
5. Define Mycorrhiza.
6. Briefly explain the types of mycorrhizal association.
7. Give a concise account on blue green algae.
8. Write short notes on the advantages of blue green algae.
9. Write a note on vermiculture.
10. Define earthworm casts.

SECTION – B
Answer ALL Questions:
(5 × 5 = 25)

- 11.a) Explain the advantages of biofertilizers.

(OR)

- b) Give an account on green manuring.

- 12.a) Briefly explain the biological nitrogen fixation.

(OR)

- b) Write brief note on free living nitrogen fixation.

- 13.a) Write short notes on occurrence and distribution of mycorrhiza.

(OR)

- b) Briefly explain the Phosphorus nutrition.

- 14.a) Enlist the advantages of blue green algae.

(OR)

- b) Explain the cultivation method of *Azolla*.

- 15.a) Give an account on earthworm and microorganisms casts.

(OR)

- b) Describe the organisms involved in Vermiculture composting.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Give a detailed account of plant growth promoting microorganisms.
17. Write an essay on mass cultivation methods of *Rhizobium*.
18. Describe the methods of isolation and inoculation of VAM.
19. Explain the production methods of blue green algae.
20. Write an essay on cow dung compost or chicken manure.




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B.Sc. Zoology Degree (Semester) Examinations, November 2017

Part – III : Allied Subject : Third Semester : Paper – I

PLANT DIVERSITY

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A
Answer ALL Questions :

(10 × 1 = 10)

- Cyanophyceae members are called _____ algae.
a) red-green b) blue-green c) yellow-green d) brown-red
- The algal component of lichen is _____.
a) phycobiont b) mycobiont
c) ascomycetes d) basidiomycetes
- In many cases, the gametophyte is a _____.
a) leaf b) thalus c) root d) stem
- Leptosporangium develops from _____ initials.
a) group b) two c) single d) three
- Cycas* is _____ feet tall.
a) 10 to 15 b) 10 to 18 c) 8 to 18 d) 18 to 80
- In *Nostoc*, arthrospores are also called _____.
a) resting spores b) waiting spores
c) fighting spores d) zoospores
- Erysiphae* are _____ parasites.
a) ecto-endo b) ecto c) exo-endo d) exo-ecto
- The bryophytes possess _____ alternation of generation.
a) hydrophobic b) hydrophilic
c) heteromorphic d) endo-spore
- Pteridophytes are characterized by the presence of _____ in the stele.
a) tubular tissues b) xylem c) phloem d) vascular tissues
- The number of archegonia present in *Cycas* may be _____.
a) 3 to 5 b) 2 to 5 c) 1 to 3 d) 2 to 4

SECTION – B
Answer ALL Questions :

(5 × 7 = 35)

- a) Describe the reproduction of Cyanophyceae.
(OR)
b) Explain the important features of *Oedogonium*.
- a) Write a short note on somatic structure of Ascomycetes.
(OR)
b) Explain the habit and habitat of Lichens.
- a) Point out the range of variation in structure of gametophytes of bryophytes.
(OR)
b) Explain the vegetative method of reproduction in bryophytes.
- a) Explain the origin of pteridophytes.
(OR)
b) Give an account on general characters of pteridophytes.
- a) Explain the structure of *Cycas* leaf.
(OR)
b) Sketch out the fertilization process of *Cycas*.

SECTION – C
Answer any THREE Questions :

(3 × 10 = 30)

- Write the life history of *Sargassum*.
- Explain the reproduction methods of sac fungi.
- Write an essay on the morphology and anatomy of lichens.
- Write a note on *Lycopodium* life cycle.
- Explain the characters of Gymnosperms.

