

First Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSA790 : Paper I : Viruses, Bacteria, Algae, Fungi Cyanobacteria and Lichens

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Answer all questions.
2. Draw diagrams wherever necessary.

I. Answer in a word or in a sentence.

6 X 1 = 6 Marks

1. Define mycoplasma.
2. Give an example for dual organism.
3. In which alga do you found "Plakea" Stage ?
4. What is the name of female reproductive part in *Batrachospermum* ?
5. Mention the common name of *Chara*.
6. What is coenocytic condition ?

II. Short answer questions.

Answer any FOUR of the following.

4 X 3 = 12 Marks

7. Explain Thallus of *vaucheria*.
8. Describe L.S. of perithecium of *Xylaria*.
9. List out non-living characters of viruses.
10. Explain lateral conjugation in *Spirogyra*.
11. Write any three uses of *Spirulina*.
12. Describe the types of Lichens based on morphology.

III. Medium answer questions.

Answer any TWO of the following.

2X6 = 12 Marks

13. Explain male and female conceptacles of *Sargassum*.
14. Describe *chara* sex organs.
15. Explain the pathology of "Citrus Canker"
16. Explain the asexual reproduction in *Penicillium*.

Contd...2

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain the sexual reproduction in *Oedogonium*.
18. Justify *Puccinia graminis - tritici* is polymorphic
19. Describe :

- a) Structure of T₄ Phage
- b) Structure of Typical Bacterial cell

Second Semester B.Sc., Degree Examinations

September / October 2022

(CBCS NEP Scheme)

Paper - II : BOTANY

Paper : II : DSC – Diversity of Non – Flowering Plants

Time: 2 hrs.]

[Max.Marks:60

SECTION – A

1. *Select the most appropriate answer from options provided : 10X 1= 10 Marks*

- i) Chara is a _____
 A) Liverwort
 B) Horn wort
 C) Stone Wort
 D) None of above
- ii) _____ gymnosperm produced top-shaped ciliated male gametes.
 A) Pinus
 B) Cycas
 C) Gnetum
 D) Ephedra
- iii) _____ is the rootless and leafless fossil
 A) Calamites
 B) Lepidodendron
 C) Rhynia
 D) Cycadoidea
- iv) Sporocarps are present in _____
 A) Pteris B) Salvinia C) Selaginella D) Equisetum
- v) Winged Pollen are present in _____
 A) Pinus
 B) Gnetum
 C) Cycas
 D) Lepidodendron
- vi) _____ is found in the life cycle of Funaria.
 A) Synangium
 B) Protonema
 C) Sporangiphore
 D) Sporophyll
- vii) Auxospores are produced in _____
 A) Nostoc
 B) Oedogonium
 C) Diatoms
 D) Chara
- viii) _____ is a moss
 A) Funaria
 B) Marchantia
 C) Anthoceros
 D) Riccia

Contd...2

- ix) Spirulina is a rich source of _____
 - A) Lipids
 - B) Protein
 - C) Starch
 - D) None of the other
- x) Fucoxanthin is the main pigment of _____
 - A) Rhodophyceae
 - B) Chlorophyceae
 - C) Myxophyceae
 - D) Phaeophyceae

SECTION - B

Answer/Write notes on any FIVE of the following. : 5X 3= 15 Marks

- 2. Globule in Chara
- 3. Male flower in Gnetum
- 4. Nostoc Filament
- 5. Stele of Selaginella stem.
- 6. T.S of thallus in Riccia
- 7. Male conceptacle in Sargassum.
- 8. Equisetum Sporophyte.
- 9. Imprints and Petrification

SECTION - C

Answer any THREE questions of the following. 3X 5= 15 Marks

- 10. Explain T-S. of Rhizome in Pteris.
- 11. Explain V.S. of Capsule in Funaria.
- 12. Explain T.S. of Lepidodendron Stem.
- 13. Explain sexual reproduction in Oedogonium.
- 14. Explain T.S of Needle in Pinus.

SECTION - D

I. Answer the following: : 2X 10= 20 Marks

- 15. Explain L-S of Sporophyte of Anthoceros and add a note on its dehiscence.

OR

Types of Steles in Pteridophytes.

- 16. Explain T.S. of leaflet of cycas and add a note on its Xerophytic features.

OR

Explain sexual reproduction in Batrachospermam.

Third Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSC 790: Paper III : Histology, Anatomy, Palynology and Embryology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Answer all questions.
2. Draw diagrams wherever necessary.

I. Answer in a word or a sentence.

6 X 1= 6 Marks

1. Define Tapetum.
2. What is passage cell?
3. Define radial vascular bundle.
4. Define pollen kit.
5. Define spores.
6. Define root cap.

II. Short answer questions.

Answer any FOUR of the following.

4 X 3= 12 Marks

7. Write a note on Histogen theory.
8. Differentiate between simple tissue and complex tissue.
9. Describe double fertilization.
10. Describe embryo sac.
11. Write the characters of Sclerenchyma.
12. Describe T.S. of Anther.

III. Medium answer questions.

Answer any TWO of the following.

2X6= 12 Marks

13. Explain Parenchyma tissues in detail.
14. Write a note on Megasporogenesis.
15. Explain T.S. of Dicot Root.

Contd...2

16. Explain endosperm with diagram.

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain vascular tissues

18. a) Explain types of Embryos

b) Apomixis

19. Describe normal secondary growth in Dicot stem.

Third Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme)

BOTANY

SSC 790: Paper III : Histology, Anatomy, Palynology and Embryology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Read the subtitles carefully and answer.
2. Draw diagrams wherever necessary.

I. Answer in a word or a sentence.

6 X 1 = 6 Marks

1. Name the tissue helps in buoyancy.
2. What is atactostele ?
3. What are bast fibres ?
4. What is tapetum ?
5. Define apogamy.
6. What is sporopollenin ?

II. Short answer questions. Answer any FOUR of the following.

4 X 3 = 12 Marks

7. Explain Tunica carpus theory.
8. Give an account on specialized parenchyma.
9. Explain lenticals.
10. Explain the exine sculptures.
11. Explain the types of Endosperms.
12. Explain types of ovules.

III. Medium answer questions. Answer any TWO of the following.

2X6 = 12 Marks

13. With labeled diagram, explain the structure of Xylem.
14. Explain the different types of vascular bundles.
15. Explain the contrivances of cross pollination.

Contd...2

16. With labeled diagram, explain the anatomy of Dicot root.

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain the anomalous secondary growth in *Boehavia* and *Dracaena*.

18. Explain the structure of anther and development of Male gametophyte.

19. Explain the development of polygonum type of Embryosac and add a note on double fertilization.

Third Year B.Sc., Degree Examinations

November / December 2022

(Directorate of Distance Education)

BOTANY

DSC290: Paper III: Morphology, Taxonomy of Angiosperms, Economic Botany and Cytogenetics

Time: 3 hrs.]

[Max.Marks:75/85

Instruction to the Candidates :

1. Students who have attended 25 Marks IA scheme will have to answer for total of 75 marks.
2. Students who have attended 15 Marks IA scheme will have to answer for total of 85 marks.
3. One mark questions should be answered in first two pages of the answer book.
4. Draw neat labeled diagram wherever necessary.
5. Q.No.V is compulsory for 85 marks scheme.

10 X 1= 10 Marks

I. Simple answer questions :

Answer in a word, or a phrase or a sentence.

1. Define monogamy.
2. What are Rucker's particles?
3. What is Syngenesions condition?
4. Write Dihybrid test cross ratio.
5. What is Translocation?
6. Define aestivation.
7. Write the scientific name of Sarpagandha.
8. In which family do you find Pepo fruit?
9. What is Thorn?
10. Give an example for Phyllode.

II. Short answer questions :

Answer any FIVE of the following.

11. Describe incomplete dominance with a suitable example.

5X 3= 15 Marks

Contd...2

12. Explain secondary wall formation.
13. Write a note on paper and pulp yielding plants.
14. Explain Phyllatoxy with suitable examples.
15. Explain verticellastes.
16. Write a note on Lysosomes.
17. Write the general characters of family Solanaceae.

III. Medium answer questions :

Answer any FIVE of the following.

5X6= 30 Marks

18. Explain monohybrid cross and add a note on Monohybrid test cross.
19. Explain the structure of chloroplast and mention its functions.
20. Explain Aerial Root modifications.
21. Enumerate the salient features of Asteraceae and write Botanical names of any two plants.
22. Explain underground stem modifications.
23. Assign the following plants to their respective family and give their botanical names
 - a) Rose wood
 - b) Clove
 - c) Ragi

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

24. Explain simple and aggregate fruits with examples.
25. Explain Euploidy
26. Explain linkage and crossing over in maize.

V. Compulsory question for 85 marks scheme only. Long answer questions.

Answer any ONE of the following.

1X10=10 Marks

27. Describe medicinal plants with botanical names and economic importance.
28. Explain germination of monocot and dicot seed.

Fourth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSD 790: Paper IV : Ecology and Environmental Biology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Answer all questions.
2. Draw diagrams wherever necessary.

I. Answer in a word, or a sentence.

6 X 1= 6 Marks

1. What are halophytes?
2. Define quadrat.
3. What is ammonification?
4. What are renewable resources?
5. Define acid rain.
6. What is social forestry?

II. Short answer questions.

Answer any **FOUR** of the following.

4 X 3= 12 Marks

7. Define topographic factors? Mention the different types.
8. Write a note on parasites.
9. Give an account on Ecological pyramid of number.
10. Write a note on energy flow in an ecosystem.
11. What are fossil fuels? Explain its types
12. Give an account on bisect method of sampling plant community.

III. Medium answer questions.

Answer any **TWO** of the following.

2X6= 12 Marks

13. Briefly explain sulphur cycle.
14. Explain the process of Xerosere.
15. What are the major causes of deforestation?
16. Write the different methods of conservation of wild life.

Contd...2

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain any four phytogeographical regions of India.
18. What is air pollution? Explain the causes and effects of air pollution.
19. Write short note on:
 - a) Effects of temperature on plants.
 - b) Soil conservation methods.

Fifth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme)

BOTANY

SSE 790: Paper V : Morphology, Taxonomy, Economic Botany and Ethnobotany

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Answer all questions.
2. Draw diagrams wherever necessary.

I. Answer in a word or a sentence.

6 X 1= 6 Marks

1. Who is the father of Indian Ethno botany?
2. What is phylloclade?
3. Define aestivation.
4. What is gamopetalous corolla?
5. Define syngenesious stamens
6. Give an example for berry.

II. Short answer questions.

Answer any **FOUR** of the following.

4 X 3= 12 Marks

7. Write the neat labelled diagram of Papilionaceous corolla.
8. Give an account on any two leaf modifications.
9. Write the distinguishing characters of the family Euphorbiaceae.
10. Write the medicinal properties of *Withania somnifera* and *Tinospora cordilofia*.
11. Give an account on any two beverage plants.
12. Describe cyathium inflorescence.

III. Medium answer questions.

Answer any **TWO** of the following.

2X6= 12 Marks

13. Write the family name, botanical name and economic uses of the following
a) Wheat b) Bengal gram c) Cinnamon d) Tobacco
14. Enumerate the distinguishing characters of the family Lamiaceae. Mention any four plants of economic importance.
15. Briefly explain Herbarium techniques and importance of herbaria of India.
16. Write the salient features of family Liliaceae and mention any four plants of economic importance.

Contd...2

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain the different types of racemose inflorescence with examples.
18. Distinguish between the family Rutaceae and Anacardiaceae with examples.
19. Explain:
 - a) Salient features of family Poaceae
 - b) Aerial root modifications.

Fifth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSE 791: Paper – VI : Cell Biology and Cytogenetics

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Read the subtitles carefully and answer.
2. Draw diagrams wherever necessary.

I. Answer in a word or a sentence.

6 X 1= 6 Marks

1. What is point mutation ?
2. Who discovered endoplasmic reticulum ?
3. Which of the cytoplasmic organelle possess Racker's particles ?
4. Define metacentric chromosome.
5. What is Genotype ?
6. Define Aneuploidy.

II. Short answer questions.

Answer any **FOUR** of the following.

4 X 3= 12 Marks

7. Explain law of independent assortment with example.
8. Write the significances of mitosis.
9. Write a note on types of RNA.
10. Draw a neat labelled diagram of Chloroplast.
11. Write a note on Incomplete dominance in *Mirabilis Jalappa*.
12. Mention any three functions of Golgi complex.

III. Medium answer questions.

Answer any **TWO** of the following.

2X6= 12 Marks

13. Explain complementary factor.
14. Explain Fluid Mosaic model with neat labelled diagram.
15. Explain polyploidy and its significance.
16. Describe the mechanism of DNA replication.

Contd...2

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain the mechanism of protein synthesis.

18. Explain Chromosomal aberration.

19. Explain

a) Lac - operon concept

b) Crossing over in Maize

Fifth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSE 790: Paper V : Morphology, Taxonomy, Economic Botany and Ethnobotany

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Answer all questions.
2. Draw diagrams wherever necessary.

I. Answer in a word or a sentence.

6 X 1 = 6 Marks

1. Name the fruit of Poaceae.
2. What is Pappus ?
3. Give an example for phylloclade.
4. Write the scientific name of coffee.
5. What is androphore ?
6. In which family gynobasic style is present ?

II. Short answer questions.

Answer any FOUR of the following.

4 X 3 = 12 Marks

7. What is aestivation ? Describe the types of imbricate aestivation with example.
8. Give an account of root modifications for mechanical support.
9. List out the vegetative characters of family Myrtaceae.
10. Define Ethnobotany. Add a note on ethnobotanical significance of ginger.
11. Write a note on insect catching mechanism in *Drosera*.
12. Describe the types of flower based on ovary position.

III. Medium answer questions.

Answer any TWO of the following.

2X6 = 12 Marks

13. Write the characteristic features of family Brassicaceae with two economically important plants.
14. Explain herbarium technique.
15. Describe any three types of fleshy fruits.
16. Write the botanical name, family and medicinal importance of a) Sarpagandha
b) Ashwagandha.

Contd...2

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Describe the salient features of following families
a) Solanaceae b) Arecaceae.
18. Explain aerial and sub aerial modifications of stem.
19. Write a note on :
a) Contributions of Carolus Linnaeus
b) Any two special types of Inflorescence

Fifth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme)

BOTANY

SSE 791: Paper – VI : Cell Biology and Cytogenetics

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

- 1. Read the subtitles carefully and answer.*
- 2. Draw diagrams wherever necessary.*

I. *Answer in a word or a sentence.*

6 X 1= 6 Marks

1. Which organelle known as suicidal bag of the cell?
2. Define cell.
3. What are dominant alleles ?
4. Who rediscovered Mendel's principles ?
5. What is back cross?
6. Name the Intian code.

II. *Short answer questions.*

Answer any FOUR of the following.

4 X 3= 12 Marks

7. Explain cell cycle.
8. Describe the mitochondria structure.
9. Mention the difference between Prokaryotic and Eukaryotic cell.
10. Why Mendel select Pea plant for his experiment?
11. Describe types of Aneuploidy.
12. Write a note on Induced mutation.

III. *Medium answer questions.*

Answer any TWO of the following.

2X6= 12 Marks

13. Explain self sterility gene with example.
14. Explain "Law of segregation" with example.

Contd...2

15. Describe the m-RNA structure.

16. Explain mitosis cell division stages and its significance.

IV. *Long answer questions :*

2X10=20 Marks

Answer any TWO of the following.

17. Explain inversion and crossing over mechanism.

18. Describe translation in protein synthesis.

19. Explain complementary factor with example.

Sixth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSF 791 : Paper VIII : Plant Breeding, Biotechnology, Plant Tissue Culture and Evolution

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Read the subtitles carefully and answer.
2. Draw diagrams wherever necessary.

I. Answer in a word or a phrase or a sentence.

6 X 1= 6 Marks

1. Define heterosis.
2. What is Organogenesis ?
3. Name the molecular scissors of genetic engineering.
4. What is self sterility ?
5. What is chimeric DNA ?
6. Expand B.T. of B.T. Cotton.

II. Short answer questions.

Answer any **FOUR** of the following.

4X 3= 12 Marks

7. Give an account PCR.
8. Write a note on significance of clonal selection.
9. Write a note on layering.
10. Explain the structure of plasmid.
11. Give an account on mass selection.
12. Explain the significance of haploid culture.

III. Medium answer questions.

Answer any **TWO** of the following.

2X6= 12 Marks

13. Explain the technique of Hybridization.
14. List out the objective of plant breeding.

Contd...2

15. Explain the Darwinian theory of evolution.
16. Explain the applications of ELISA.

IV. Long answer questions :

Answer any TWO of the following.

2X10=20 Marks

17. Explain the steps involved in Stem culture.
18. Explain the technique of production of monoclonal antibodies and add note on their applications.
19. Explain
 - a) Lamarckism
 - b) Significance of pure line selection.

Sixth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme)

BOTANY

SSF790 : Paper VII : Plant Physiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. Answer all questions.
2. Draw diagrams wherever necessary.

I. Answer in a word, or in a sentence.

6 X 1= 6 Marks

1. What is Apical Dominance ?
2. Give an example for permeable membrane.
3. Define photoperiodism.
4. What is Krenz type of Anatomy ?
5. Define fermentation.
6. What is divernalization?

II. Short answer questions.

Answer any FOUR of the following.

4 X 3= 12 Marks

7. List out the physiological effects of Ethylene.
8. Explain the function of dehydrogenase with one example.
9. List out the applications of Gibberellins.
10. Define Osmosis. Diffusion and DP.D.
11. Describe the structure of hydathode.
12. List out the causes of seed dormancy.

III. Medium answer questions.

Answer any TWO of the following.

2X6= 12 Marks

13. Explain transpiration pull theory.
14. Describe Munch hypothesis.
15. Explain Donnon's equilibrium theory.
16. Explain Potassium pump theory of transpiration.

Contd...2

IV. Long answer questions :

2X10=20 Marks

Answer any TWO of the following.

17. Explain Phototropism experiment.

18. Describe E.M.P path way.

19. Explain :

a) Z - scheme

b) Oxidative phosphorylation

Botany.
