R–3025

Sub. Code
525201

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

TAXONOMY OF ANGIOSPERMS

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Natural system
2. Engler
3. Author citation
4. Genus
5. Monophyletic
6. BSI
7. Transitional Combinational Theory
8. Allopatric speciation
9. Stylopodium
10. Ranunculales.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss the demerits of the natural system of classification.

Or

(b) Listout the importance of plant classification.

12. (a) List out the rules and recommendations of the ICBN.

Or

(b) Describe the process of Herbarium preparation.

13. (a) What is the importance of anatomical characters in plant classification.

Or

(b) Discuss the concept of 'speciation' in plants.

14. (a) List out the importance of Rutaceae members.

Or

(b) List out the diagnostic characters of the family malvaceae.

15. (a) Discuss the phylogeny of orchidaceae.

Or

(b) List out the diagnetic characters of the family poaceae.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on "Benthem and Hooker's" classification.

17. Listout the importance of hierarchial classification.

18. Write an essay on chemetaxonomy and its significance in the classification of plants.

19. Discuss in detail the systematics and phylogeny of the family Fabaceae.

20. Write an essay on the systematics and phylogeny of the family Rubiaceae.

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R–3026

Sub. Code
525202

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

PLANT ANATOMY, EMBRYOLOGY AND PLANT BREEDING

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Plerome.
2. Dermatogen.
3. Leaf abscission.
4. Stomata.
5. Synergid.
6. Integument.
7. Apospory.
8. Endosperm.
9. Heterosis.
10. Hybridization.

Part B (5 × 5 = 25)

Answer **all** questions

All questions carry equal marks.

11. (a) Write short notes on cambium in monocotyledons.

Or

(b) Comment on fascicular and interfascicular cambium.

12. (a) Give an account on vascularization of flower.

Or

(b) Briefly describe primary structure of Monocot root.

13. (a) Briefly explain the microspore wall morphology.

Or

(b) Write notes on Megagametogenesis.

14. (a) Enumerate the functions of endosperm.

Or

(b) Describe the nutrition of embryo.

15. (a) Give an account on national biodiversity policy.

Or

(b) Write short notes on clonal selection.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the theories of organization of root and shoot apical meristem.

17. Illustrate the vascular differentiation in secondary root in dicot.

18. What is incompatibility. Add a note on methods to overcome incompatibility.

19. Describe in detail about cytology, physiology and functions of endosperm.

20. Describe the principle and screening procedure for resistance breeding.

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R–3027

Sub. Code
525203

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

PLANT PHYSIOLOGY AND BIOCHEMISTRY

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Osmosis
2. Water potential
3. Phosphorylation
4. How many ATP are used and produced in glycolysis?
5. Florigen
6. Dormancy
7. EC Number
8. Functional group
9. Isoelectric point
10. Steroids

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

All questions carry equal marks.

11. (a) Briefly describe translocation of solutes.

Or

(b) Write short notes on Emersons effect.

12. (a) Describe the metabolism of fat.

Or

(b) Give the outline of pentose phosphate pathway.

13. (a) Write notes on photoperiodism.

Or

(b) Give an account on physiology of flowering.

14. (a) Explain the enzyme nomenclature.

Or

(b) Outline the classification of enzyme.

15. (a) Give the structure of an amino acid.

Or

(b) What are secondary metabolites.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the glycolate metabolism and its significance.

17. Describe oxidation phosphorylation.

18. Write in detail about the physiology of breaking dormancy.

19. Describe enzyme kinetics.

20. Outline the classification of lipids. Add a note on its properties.

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R–3028

Sub. Code
525503

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

ECONOMIC BOTANY

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write the botanical name of black Green and chick pea.
2. Centres of origin.
3. Green revolution.
4. Root vegetables.
5. Clove.
6. Starch.
7. Curcumin.
8. Coffein.
9. Tea.
10. Molassess.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain the history of origin of wheat in India.

Or

(b) Discuss the cultivation practices of black gram.

12. (a) List out the economic importance of cassava.

Or

(b) List out the economic importance of jackfruit.

13. (a) Explain the cultivation practices of Ginger.

Or

(b) List out the economic importance of cardamom.

14. (a) Elaborate the cultivation practice of coffee.

Or

(b) List out the economic importance of cotton.

15. (a) Explain the processing mechanism of coconut and its economic importance.

Or

(b) List out the alkaloids/drugs obtained from mechanical plants with examples.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Name the chief oil yielding crop of India. Describe its morphology, cultivation and uses.

17. Describe the history, method and cultivation and uses of sugarcane.

18. Describe the origin, distribution and botanical description of clone yielding plant.

19. Discuss in detail the cultivation practises and industrial importance of Potato.

20. Discribe the origin, distribution and cultivation paradises of any one of the cereal grown in India.

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R–3029

Sub. Code
525501

M.Sc. DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Botany

PLANT TISSUE CULTURE

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Trace elements.
2. Cytokinin.
3. Totipotency.
4. Synchronization.
5. Germplasm.
6. Micropropagation.
7. Somatic fusion.
8. Hybrid.
9. Gene bank.
10. Biotransformation.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

All questions carry equal marks.

11. (a) Describe the role of growth hormones in plant tissue culture.

Or

(b) Briefly outline the concept of plant tissue culture.

12. (a) Describe the totipotency of epidermal cell.

Or

(b) Describe the role of plant growth regulators in vascular differentiation.

13. (a) Comment on technical problems in micropropagation.

Or

(b) Describe the stages of embryo development.

14. (a) Write short notes on Androgenesis.

Or

(b) Briefly outline the importance of ovary culture.

15. (a) Describe the applications of tissue culture in pharmaceutical industry.

Or

(b) Write short notes on modes of preservation.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the methods involved in sterilization of media.

17. Describe cell suspension culture.

18. Describe organogenesis.

19. Explain anther culture in detail and add a notes on its application.

20. Describe Hairy root culture.

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R–3030

Sub. Code
525504

M.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Botany

HERBAL TECHNOLOGY

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Unani medicine.
2. Herb.
3. Name any two plants used to heal wounds.
4. Infusions.
5. Drugs.
6. Coumarins.
7. IUCN.
8. IPR.
9. Rhizome.
10. Bulbs.

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the medicinally important plants with special reference to bares.

Or

(b) Describe about the traditional medicine of south India.

12. (a) Describe the medicinal plants and properties of family zingiberaceae.

Or

(b) Briefly outline poisonous plants and their action.

13. (a) Write short notes on pharmaceutical importance of steroids.

Or

(b) Comment on flavonids.

14. (a) Outline the methods in herbal plant storage and protection.

Or

(b) Briefly describe the methods in harvesting herbal plants.

15. (a) Describe the different methods of vegetative propagation.

Or

(b) List out the compounds present in Catheranthus roseus and give their medicinal property.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give the importance of medicinal plants in human healthcare.

17. Describe the medicinal important plants under Euphorbiaceae family.

18. Describe the classification of drugs.

19. Describe Exsitu conservation methods of herbal plant.

20. Briefly outline the Agrotechnology developed for Withania Somnifera.

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R–3264

Sub. Code
525102

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

PLANT DIVERSITY — II
(PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY)

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Write legibly and draw diagrams wherever appropriate.

Part A (10 × 2 = 20)

Answer **all** questions.

Write short notes on the following keywords :

1. Microphylls.
2. Archegonia.
3. Apogamy.
4. Heterospory.
5. Pollen grain.
6. Pre-pollen.
7. Hypostomata.
8. Coralloid roots.
9. Fossil cycads.
10. Mesozoic era.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Describe the transverse section of stem of psilotum.

Or

(b) Discuss in detail the characteristic features of gametophyte of hycopodium.

12. (a) Explain Heterospory and seed habit in Pteridophytes.

Or

(b) List out the economic importance of pteridophytes.

13. (a) Describe briefly the process of pollen germination in gymnosperm with any one example.

Or

(b) Discuss the structure of sporephyte of cycas.

14. (a) Describe the mode of reproduction in Taxus.

Or

(b) Describe the mode of reproduction in Gnetum.

15. (a) Discuss briefly about 'Radio Carbon Dating' and its applications.

Or

(b) Write a brief note on fossil fuels.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the classification of pteridophytes.

17. Describe in detail about the sporophyte of lycopodium.

18. Discuss the general characteristic features of gymnosperms.

19. Give a detailed account on the reproduction pattern in coniferales.

20. Describe in detail about the geological time scale and fossil pteridophytes with examples.

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R–3265

Sub. Code
525103

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

MICROBIOLOGY AND PLANT PATHOLOGY

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Teichoic Acid.
2. N-acetylglucosamine.
3. Virions.
4. DNA virus.
5. Disease potential.
6. Resistance.
7. Chitinase.
8. Infection peg.
9. Necrosis.
10. Rust.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) List out the salient features of 'Archea bacteria'.

Or

(b) Describe briefly the ultra structure of bacteria.

12. (a) Discuss the various mechanism of viral transmission.

Or

(b) Write briefly about the 'antibiotics' involved in disease prevention.

13. (a) What are 'Koch's postulates'? What are its importance?

Or

(b) What is "Plant disease epidemics"? List out its importance.

14. (a) What are the different cultural practices can be adopted to overcome the plant disease?

Or

(b) List out the importance of integrated disease management.

15. (a) Discuss briefly the symptoms, and control measures of Anthracnose of Mango.

Or

(b) Discuss briefly the symptoms and control measures of "Wilt of cotton"

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the economic importance of bacteria.

17. Discuss in detail the modes of viral replication in plants.

18. Describe in detail the components of "Disease Triangle" and disease cycle.

19. Write an essay on the different chemical control methods to overcome the plant disease.

20. Describe in detail the disease cycle and control measures of "Leaf spots of groundnut" and blast and sheath blight of paddy.

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R–3266

Sub. Code
525104

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

CELL BIOLOGY AND GENETICS

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Write legibly and draw diagrams wherever appropriate.

Part A (10 × 2 = 20)

Answer **all** questions.

1. Peroxisomes.
2. Osmosis.
3. Euchromatin.
4. S-phase.
5. Back cross.
6. Mutagens.
7. X-linked traits.
8. Cytoplasmic male sterility.
9. Lac operon.
10. Transposans.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) List out the properties of plasma membrane.

Or

(b) Describe the structure of peroxisomes and list out its functions.

12. (a) What is "polyploidy"? Give its importance in evaluation.

Or

(b) Give an account of chromosomal aberrations.

13. (a) Describe co-dominance with suitable examples.

Or

(b) Explain the types of gene mutation.

14. (a) Explain polygenic inheritance.

Or

(b) Write short notes on linkage.

15. (a) What are 'operons'? Explain its components.

Or

(b) Explain the experimental approach of proving RNA as the genetic material.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe in detail the structure and function of chloroplast.

17. Write an essay on 'cell cycle' event in plants.

18. Discuss the importance of laws of Mendel. Add a note on mono and dihybrid cross.

19. Discuss how the process of sex determination in plants is evolved.

20. Write an essay on replication and transposition event of transposable elements.

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R–3267

Sub. Code
525303

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Botany

BIOSTATISTICS, BIOPHYSICS AND BIOINFORMATICS

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

Define the following:

1. Mean Deviation.
2. Non-sampling error.
3. Alternate hypothesis.
4. Confidence interval.
5. De-excitation.
6. First law of thermodynamics.
7. Genbank.
8. Biological sequence.
9. Sequence search.
10. Phylodraw.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

All questions carry equal marks.

11. (a) Briefly describe the types of population pyramids.

Or

(b) Describe different types of sampling methods.

12. (a) Write notes on 'Z' test.

Or

(b) Write short notes on Chi-square test.

13. (a) Give an account on characteristics of solar radiation.

Or

(b) Write short notes on energy level.

14. (a) Write short notes on EMBL nucleotide sequence database.

Or

(b) Write short notes on protein sequence database.

15. (a) Comment on FASTA.

Or

(b) Comment on BLAST.

Part C (3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

16. Give an account on the measures of central tendency and dispersion.

17. Explain the types of tests of significance.

18. Critically comment on Redox potential and Redox couples.

19. Give the importance of data retrieval and analysis.

20. Describe in detail about Multiple sequence alignment.

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