F–1986

Sub. Code
7MBO1C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

PLANT DIVERSITY (ALGAE, FUNGI, LICHENS, BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY)

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Draw diagrams wherever necessary.

Part A (10 × 2 = 20)

Answer **all** questions.

1. Hormongonia.
2. Coenobium.
3. Parasexual life cycle.
4. Soridia.
5. Protonema.
6. Columella.
7. Alternation of generation.
8. Telome.

9. Manoxylic wood.

10. Petrifaction.

Part B (5 × 5 = 25)

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

11. (a) Enumerate the general characters of Chlorophyceae with example.

Or

(b) Explain the evolution of sex in Algae.

12. (a) Mention about fungal nutrition.

Or

(b) Enlist the ecological and economical role of Lichens.

13. (a) Enumerate the salient features of Bryophytes.

Or

(b) Give the comparative account of sporophyte of Marchantia and Anthoceros.

14. (a) Elucidate the different types of spore producing structures in Pteridophytes.

Or

(b) Write an account on spore germination patterns in Pteridophytes.

15. (a) Distinguish Gymnosperms from Angiosperms.

Or

(b) Discuss the different types of fossilization methods.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the different life cycle patterns in algae with suitable examples.

17. Give an account on phylogeny and interrelationship of major group of Fungi.

18. Write an detailed essay on fossil Bryophytes.

19. Explain the origin of heterospory and seed habit in Pteridophytes.

20. Describe the age determination and method of study of fossils.

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F–1987

Sub. Code
7MBO1C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

METHODS IN BOTANY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Condenser lens
2. Electron gun
3. Primary stain
4. Ocular meter
5. R_f value
6. Grating
7. Angular velocity
8. Half–life period
9. Cultural Importance Index
10. RWC.

Part B (5 × 5 = 25)

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

11. (a) Write about chromosome painting.

Or

(b) Write the principle of electron microscopy.

12. (a) Explain shadow casting technique.

Or

(b) Write about paraffin staining.

13. (a) Write the principle of molecular sieve chromatography.

Or

(b) Write down the procedure for biochemical analysis of lipids.

14. (a) Explain differential centrifugation.

Or

(b) What are marker enzymes? Write their supplications.

15. (a) Define stomatal index. Review its importance in physiological studies.

Or

(b) Bring out the importance of documentation and evaluation of plants.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the principle and applications of SEM.

17. Describe the procedure of double staining.

18. Explain the principle, working and applications of GLC.

19. Describe the technique of Mass Spectrophotometry.

20. Write a detailed account on Data collection and interpretation.

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F–1988

Sub. Code
7MBO1C3

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

MICROBIOLOGY AND PLANT PATHOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Capsomeres
2. Glycocalyx
3. Actinomycetes
4. Sigmoid curve
5. Etiology
6. Hypersensitivity
7. Damping-off
8. Mildew
9. Mycotoxin
10. Horizontal resistance.

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

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

11. (a) Outline Whittaker five kingdom concept of classification.

Or

(b) Explain the transmission of virus particles.

12. (a) Explain the structure of heterocyst.

Or

(b) Explain $F^+ \times F^-$ conjugation.

13. (a) Explain Koch's goose neck experiment.

Or

(b) Give a short note on aflatoxins.

14. (a) Write the symptoms of little leaf disease of brinjal.

Or

(b) Explain the sectional view of infected leaf of tikka disease.

15. (a) Write down the characteristic changes that take place in histology of plant tissues due to the entry of bacteria.

Or

(b) What are the changes exhibited on plant cells due to entry of the pathogens?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the replication of virus.

17. Describe the mechanism of transformation in bacteria under controlled condition.

18. Critically analyse the significances of integrated disease management.

19. Write an essay on wilt of Cotton.

20. Discuss the cell to cell fusion in normal and abnormal cells.

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F–1989

Sub. Code
7MBO1C4

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

CELL BIOLOGY AND BIOPHYSICAL CHEMISTRY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Cisternae.
2. Peroxisomes.
3. Synthetic phase.
4. Abiotic stress.
5. Vander Waal forces.
6. Covalent bond.
7. ATP.
8. Hydrogen ion concentration.
9. Domains.
10. Z-DNA.

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

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

11. (a) Write about Golgi apparatus.

Or

(b) Give an account on active transport mechanism.

12. (a) Explain the fine structure of chromatin.

Or

(b) Write about the physiological factors that influence bacterial growth.

13. (a) Write notes on the Secondary structure o proteins.

Or

(b) Explain β – oxidation cycle.

14. (a) Explain the reactions of glycolysis.

Or

(b) What are isozymes? Write a short note on them.

15. (a) Explain β – pleated sheet.

Or

(b) Explain the structure of t-RNA.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the ultra structure of cell wall.

17. Explain the stages of meiosis.

18. Discuss the metabolism of nucleotides.

19. Explain the mechanism of electron transport in mitochondria.

20. Analyse the factors that conforms the stability of proteins.

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F–1990

Sub. Code
7MBO1E1

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Botany

Elective: MUSHROOM CULTIVATION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Draw diagrams wherever necessary

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name any two medicinally important mushrooms.
2. Give the binomial name for button mushrooms.
3. What is sterilization?
4. What do you mean by spawn?
5. Mention the pest affecting the mushroom cultivation.
6. How do you preserve the mushrooms?
7. What is short-term storage of mushroom?
8. What type of vitamins are there in edible mushrooms?
9. Mention the name of any one regional mushroom research centre.
10. Write short note on export value of mushrooms.

Part B (5 × 5 = 25)

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

11. (a) Give an account on nutritional value of edible mushrooms.

Or

(b) Distinguish the Poisonous mushrooms from edible mushrooms.

12. (a) What are the infrastructure needed for mushroom bed preparation?

Or

(b) Describe the compost technology for mushroom production.

13. (a) Explain the symptoms causes and prevention of bacterial and fungal contamination occurring in mushroom beds.

Or

(b) Give note on economics of mushroom cultivation.

14. (a) Point out the short-term storage methods in mushroom preservation.

Or

(b) Briefly explain the protein value in edible mushrooms.

15. (a) Explain the ingredients and preparation methods of mushroom salad and mushroom soup.

Or

(b) Discuss the marketing value and export strategies of mushroom industry in Indian scenario.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on edible mushrooms in India.

17. Technically describe the spawn production methods and its advantages.

18. Discuss the cultivation of Oyster mushroom in detail.

19. Elaborate the methods involved in long-term storage of mushrooms.

20. Write an account on different food and recipes prepared from mushrooms.

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F–1992

Sub. Code
7MBO2C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

TAXONOMY OF ANGIOSPERMS AND ECONOMIC BOTANY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Mention about artificial system of plant classification.
2. Note on taxonomic contribution of de Candolle.
3. Define taximetrics.
4. What is serotaxonomy?
5. Point out current changes in ICBN.
6. Where is located National Botanical Garden of India?
7. None on epigyny.
8. Difference polypetalous and gamopetalous.
9. Draw a flora diagram of Casuaring Tikalin.
10. Mention any two root drug yielding plants.

Part B (5 × 5 = 25)

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

11. (a) Explain the natural system of plant classification.

Or

(b) Analyse the ancestors of angiosperms.

12. (a) Explain the role of plytochemicals in taxonomy.

Or

(b) Point out the types of manual keys and rules for construction of dichotonomous key.

13. (a) Elucidate the rules for valid publication in plant taxonomy.

Or

(b) Enlist the branches of botonical survey of India and their functions.

14. (a) Describe the floral characters of Menispermaceae.

Or

(b) Give the vegetable and floral characters of Loranthaceae.

15. (a) Explicit the vegetative and floral characters of commerlinaceue with diagrams.

Or

(b) Give an account on fiber yielding plants and types of fibers.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give a comparative account of Bentham and Hooker's and Engler and Prantl classifications.

17. Write a detailed account on molecular plant taxonomy and its applications.

18. Classify the typification processes with suitable examples.

19. Give a detailed account on vegetative and floral characters of Capparidaceae and add note on its economic importance.

20. Describe the floral diversity of Orhidaceae with suitable diagrams and note on its economic importance.

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F–1993

Sub. Code
7MBO2C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

GENETICS AND EVOLUTION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Multiple allele
2. Expressivity
3. Tetrad analysis
4. Complementary genes
5. Transition
6. Trisomy
7. Evolutionary variation
8. Oparine hypothesis
9. Gene pool
10. Allopatricity

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

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

11. (a) State and explain Mendelian law of dominance.

Or

(b) Describe co-dominance with example.

12. (a) Write about the principle and method of gene mapping with molecular markers.

Or

(b) Define and explain maternal inheritance with example.

13. (a) Analyse the causes and impact of human genetic disorders.

Or

(b) Describe the principle, method and applications of insertional mutagenesis.

14. (a) Discuss about the evolutionary origin of basic biological molecules.

Or

(b) Write a short note on anaerobic metabolism.

15. (a) Write a short note on molecular clocks.

Or

(b) Discuss about the factors associated with convergent evolution.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the strategies for analysis of fine structure of gene.

17. Discuss about methods and importance of gene mapping.

18. Explain different type of genetic mutations with illustration.

19. Write a detailed note on Darwin's concept on evolution.

20. Explain the mechanism and significance of population genetics.

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F–1994

Sub. Code
7MBO2C3

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

FUNDAMENTAL PROCESSES, CELL COMMUNICATION AND CELL SIGNALLING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Introns
2. SSB protein
3. Svedberg Unit
4. Transcriptase
5. G Protein
6. Give two examples of Integrins
7. T-cell
8. Antibody
9. Vaccine
10. HLA.

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

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

11. (a) Write short notes on DNA repair mechanism.

Or

(b) Write briefly on post transcriptional modifications and its significance.

12. (a) With a neat diagram explain the role of tRNA.

Or

(b) Describe gene expression in Viruses and its role in pathogenesis.

13. (a) Write an account on adhesion molecules with examples.

Or

(b) Write short notes on light signaling in plants.

14. (a) Write briefly on immune system cells and its role in immunogenicity.

Or

(b) What is the role of monoclonal antibodies in immunology? Describe in brief.

15. (a) Write notes on primary and secondary immune modulations.

Or

(b) Explain the mechanism of hypersensitivity with examples.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the process of transcription in eukaryotes with neat diagrams.

17. What is gene expression? Write a detailed account on its control in different organisms.

18. Write a detailed account on cell signaling and its role in cell communication.

19. Write an essay on antigen-antibody interactions and its role in immunity. Add a note on antibody engineering and its applications.

20. Write an essay on immune response mechanisms against certain pathogens.

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F–1995

Sub. Code
7MBO2E1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

Elective — HERBAL BOTANY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is indigenous medicine?
2. Mention any two folklore medicine.
3. Write about suicidal plants.
4. What are organoleptic characters?
5. Mention any two alkaloid yielding plants.
6. Note on biological evaluation of a drug.
7. Name any two non-flowering medicinal plants.
8. Write of storage of medicinal plants.
9. Define herbal cosmetology.
10. Name the plants used for hair-dye.

Part B (5 × 5 = 25)

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

11. (a) Explain the medicinal plants used in Ayurvedic system and their properties.

Or

(b) Mention the uses of entire plant drug with suitable examples.

12. (a) Enlist the organoleptic characters found in any two plant drugs.

Or

(b) Explain the chemical constituents and therapeutic uses of *Piper* and *Allium*.

13. (a) Expound the different branches of pharmacognosy.

Or

(b) Enumerate the different phytochemical tests for analysing the constituents of *Curcuma*.

14. (a) List out the suitable medicinal plants for home garden and their uses.

Or

(b) Give a short account on cultivation practices of *Phyllanthus*.

15. (a) Write an account on plant antioxidants.

Or

(b) Narrate the current status of herbal cosmetic industries in India.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Bring out the classification of natural drugs with suitable examples.

17. Write an essay on poisonous medicinal plants in India.

18. Discuss the adulteration of drugs with suitable examples and add note on its detection methods.

19. Explain the cultivation practices for *Gloriosa superba*.

20. Enlist the plants used in herbal cosmetics with their properties.

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F–1996

Sub. Code
7MBO2E3

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Botany

***Elective* – FOOD PROCESSING TECHNOLOGY**

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

Define the following :

1. Recommended Dietary Allowance
2. Basal Metabolic Rate
3. Emulsifiers
4. Dietary fibre
5. Sub cutaneous drug administration
6. Soft diet
7. Brining
8. Fillers
9. HACCP
10. GMP

Part B (5 × 5 = 25)

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

11. (a) Give an account of the physicochemical properties of the food.

Or

(b) Explain the nutrition in pregnancy.

12. (a) Bring out the importance of antioxidants in food.

Or

(b) List down the coloring and flavouring agents of food.

13. (a) Explain the phenomenon of biotransformation.

Or

(b) Analyse the diet planning.

14. (a) How will you preserve the food by freezing?

Or

(b) Explain the curing and smoking.

15. (a) Examine any one method of rapid diagnosis of food.

Or

(b) What do you mean by PFA and FPO?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the types of food groups.

17. Discuss the types of food adulterants.

18. Describe the principles and objectives of diet therapy.

19. Examine the functions of any two food packaging equipments.

20. Write an essay on the role of AGMARK and BIS in maintaining the quality of food in India.

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F–1997

Sub. Code
7MBO3C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Botany

PLANT PHYSIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. P-Protein bodies.
2. Apoplast.
3. *Nif* gene.
4. Respiratory Quotient.
5. Biological clock.
6. Cytochromes.
7. Bud dormancy.
8. Geotropism.
9. Senescence.
10. Heat shock protein.

Part B (5 × 5 = 25)

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

11. (a) Give an account of the Mass flow hypothesis of transport of organic solutes.

Or

(b) Describe the role of any three micronutrients in plant life.

12. (a) Describe the process of cyclic photophosphorylation.

Or

(b) Describe CAM pathway.

13. (a) Write notes on bioluminescence.

Or

(b) Describe stomatal movement with neat diagram.

14. (a) Describe the different methods of breaking seed dormancy.

Or

(b) Write notes on the biosynthesis of Ethylene and its role.

15. (a) Explain the biosynthesis of Terpenes.

Or

(b) Write an account on programmed cell death and their importance in plants.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the mechanism of ascent of sap.

17. Give a detailed account of Calvin cycle.

18. Write a detailed essay on photoperiodism.

19. Describe the biosynthesis, mode of action and applications of Auxins.

20. Write detailed notes on the role of abiotic stress on the physiology of plants.

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F–1998

Sub. Code
7MBO3C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Botany

DEVELOPMENTAL BIOLOGY AND PLANT BIOTECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Gametogenesis

2. X-bodies

3. Periderm

4. Lenticels

5. DNA ligase

6. YAC

7. Reporter gene

8. Probe

9. Golden rice

10. Interferon.

Part B (5 × 5 = 25)

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

11. (a) Write notes on pollen stigma incompatibility and its significance.

Or

(b) Describe the development of monocot embryo with neat diagram.

12. (a) Describe the anatomical features of Dicot leaf with neat diagram.

Or

(b) Explain the secondary structure of Dicot stem with neat diagram.

13. (a) Give a brief account on various types of vectors used in genetic engineering.

Or

(b) Write notes on restriction endonucleases and its uses.

14. (a) Explain the principle and application of Western blotting.

Or

(b) Write notes on RFLP and its importance.

15. (a) Describe site directed mutagenesis and its applications.

Or

(b) Write brief account on application of biotechnology in plants.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail the types and functions of Endosperm found in Angiosperms.

17. Write detailed account on Meristems and its significances.

18. With neat diagrams explain the physical methods of gene transfer.

19. Explain the various methods for screening of recombinant clones.

20. Write detailed notes on gene sequencing strategies and its applications.

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F–1999

Sub. Code
7MBO3C3

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Botany

PLANT ECOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Ecology
2. Species
3. Climate
4. Deforestation
5. Community
6. Deme
7. Species area curve
8. Herbivory
9. Ozone
10. Bioremediation

Part B (5 × 5 = 25)

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

11. (a) Describe some of the principles of ecology.

Or

(b) Write notes on energy flow in an ecosystem with examples.

12. (a) Comment on the effect of human interferences on the environment.

Or

(b) Write brief notes on influences of edaphic factors on plant growth.

13. (a) Write notes on population regulations and its significances.

Or

(b) What is metapopulation? Discuss on some of its importances.

14. (a) Write notes on types of ecological successions and its role.

Or

(b) Describe some of the importances of forests with examples.

15. (a) With examples explain the causes of water pollution.

Or

(b) Write notes on control of Noise pollution with examples.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe in detail some of the types of ecosystems and their significances.

17. Write detailed account on the role of habitat and niche with relation to environment.

18. What is the significance of r/K selection on evolution? Explain in detail with examples.

19. Describe in detail the methods of studying vegetation and its significances.

20. List out the methods for effective management of pollution with examples.

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F–2003

Sub. Code
7MBO3E5

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Botany

Elective – RESEARCH METHODOLOGY, BIOINFORMATICS, BEHAVIOUR AND TEACHING SKILLS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

Define the following.

1. Analytical research
2. Research ethics
3. Frequency polygon
4. Chi-square test.
5. Data base.
6. BLAST
7. Kin selection.
8. Memory
9. CMI.
10. Group Discussion

Part B (5 × 5 = 25)

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

11. (a) Give an account of the research design.

Or

(b) Explain the differences between a short communication and a full paper.

12. (a) How will you collect the data?

Or

(b) Explain the applications of ANOVA.

13. (a) Explain the utility of word processing software.

Or

(b) Compare thesis with dissertation.

14. (a) Examine the phenomenon of cognition.

Or

(b) Give an account of parental investment.

15. (a) How will you explain the skill of stimulus variation?

Or

(b) Critically analyse the versatility of lecture technique.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Highlight the importance of Review of Literature.

17. Calculate the standard deviation of the height of plants

62,85,73,81,74,58,66,72,84,65,83,80,86,71,75.

18. Critically review the features and applications of protein sequence databases.

19. Analyse the methods and approaches of studying the behaviour.

20. Write an essay on instructional technology.

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F–2137

Sub. Code
7MBO3E4

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Botany

Elective — PLANT BREEDING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

Define the following :

1. Camerarius.
2. Cleistogamy.
3. Bagging.
4. Anthesis.
5. Secondary centre of origin.
6. Domestication.
7. Gamma Garden.
8. CRRI.
9. Monogenic inheritance.
10. Hybrid vigour.

Part B (5 × 5 = 25)

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

11. (a) Give an account of the important achievements of plant breeding.

Or

(b) Explain the selfing in plant breeding.

12. (a) Describe the methods of selection of superior strains.

Or

(b) How will you perform breeding in vegetatively propagated plants?

13. (a) Explain the acclimatization of plants.

Or

(b) Give an account of the selection of self pollinated plants.

14. (a) What do you mean by polyploidy?

Or

(b) Highlight the role of biotechnology in crop improvement.

15. (a) Give any two examples for polygenic inheritance.

Or

(b) Examine the applications of heterosis.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the different modes of reproduction in plants.

17. Discuss the-hybridization of self pollinated plants.

18. Discuss the features of plant genetic resources.

19. Bring out the applications of auto and allopolyploids.

20. Write an essay on quantitative inheritance.

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