

Or

What is tissue ? Describe the classification of tissue with examples.

5. Discuss the organisation of shoot apex in stem.

Or

Describe the anomalous secondary growth in stem.

6. Describe the anatomy of monocot root.

Or

Describe the development and composition of periderm.

7. Describe the anatomical adaptations in Xerophytes.

Or

Discuss the secretory system in plants.

3rd Semester Examination, 2021

Time : 3 hours

Full Marks : 60

Answer from all the Parts as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(MODEL CBCS)

(ANATOMY OF ANGIOSPERMS)

PART - I

1. Answer the following questions in one word : 1 x 8

- (a) Casparian stripes are found in _____.
- (b) Which tissue gives mechanical support ?
- (c) Cambium originates from _____ meristem.
- (d) Histogen theory was proposed by _____.

- (e) In dicot root vascular bundles are _____
- (f) Clinging roots are found in _____ plants.
- (g) Well developed pith is found in _____
- (h) Wound healing in plants is initiated by _____

PART - II

2. Answer the following questions in two to three sentences (any eight) : $1\frac{1}{2} \times 8$

- (a) Adornstation
- (b) Plasmodesmata
- (c) Stele
- (d) Pallisade Parenchyma
- (e) Cambium
- (f) Quiescent Centre
- (g) Sap wood
- (h) Tyloses
- (i) Lithocysts
- (j) Sclerenchyma.

(Continued)

PART - III

3. Answer any eight of the following within 75 words : 2×8

- (a) Complex tissue
- (b) Cell wall ingrowths
- (c) Origin of lateral root
- (d) Secondary growth
- (e) Anatomy of dicot stem
- (f) Laticifers
- (g) Rhitidome
- (h) Root cap
- (i) Diffuse porous wood
- (j) Trichomes.

PART - IV

Answer all questions in 500 words : 6×4

4. Describe the applications of anatomy in systematics and forensic sciences.

(Turn Over)

3rd Semester Examination, 2021

Time : 3 hours

Full Marks : 60

Answer from all the Parts as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(MODEL CBCS)

(ECONOMIC BOTANY)

PART - I

1 x 8

1. Answer all questions in one word :

- (a) Centre of Origin of cultivated plant was given by_____.
- (b) Name the family of Wheat.
- (c) The alkaloid found in Tea is_____.

(Turn Over)

(2)

- (d) Cinchona is a native of _____.
- (e) Name a fumigatory plant of solanaceae.
- (f) Essential oils are usually obtained using _____ process.
- (g) Elasticity of rubber is due to its _____.
- (h) Linseed oil is used in paints as _____.

PART - II

2. Answer any *eight* questions within *two to three*
 $1\frac{1}{2} \times 8$
sentences :

- (a) Define genetic diversity.
- (b) Why legumes are important to man ?
- (c) Name the by-products of sugarcane industry.
- (d) Uses of fennel.
- (e) Health hazards of tobacco.
- (f) Botanical name of Groundnut and family.
- (g) Comparison of essential oil with fatty oil.

(Continued)

(3)

- (h) What is tapping ?
- (i) Uses of fibers.
- (j) Systematic position of Teak.

PART - III

3. Answer any *eight* of the following questions
within 75 words : 2×8

- (a) Plant Introduction
- (b) Evolution of new crops
- (c) Morphology of potato
- (d) Saffron
- (e) Cannabis
- (f) Extraction of groundnut oil
- (g) Botany of *Brassica*
- (h) Classification of fibers
- (i) Uses of timber
- (j) Para rubber

(4)

PART-IV

Answer all questions within 500 words : 6 x 4

4. Briefly describe the origin of cultivated plants.

Or

Describe briefly the cultivation of Rice.

5. Discuss the morphology, processing and uses of *Coffee*.

Or

Describe the processing uses and health hazards of *tobacco*.

6. Describe the extraction, uses and botany of coconut.

Or

Describe the general account and extraction methods of essential oil.

(5)

7. Discuss the tapping, processing and uses of natural rubber.

Or

Describe the morphology, extraction and uses of cotton fibers.

3rd Semester Examination, 2021

Time : 3 hours

Full Marks : 60

Answer from all the Parts as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(MODEL CBCS)

(GENETICS)

PART – I

1. Answer all the following questions in one word
each : 1×8

(a) If both genotype and phenotype shows the
same ratio of 1 : 2 : 1 in the F_2 generation,
it shows _____.

(b) Test cross determines _____.

(4)

- (g) Aneuploidy.
- (h) Alkylating agents.
- (i) Allele frequency.
- (j) Genetic Variation.

PART - IV

Answer all questions of the following
within 500 words each :

6 x 4

4. Describe the principles and history of Inheritance.

Or

What is extrachromosomal inheritance ?
Discuss the extrachromosomal inheritance in plants.

5. What is crossing over ? Discuss the cytological basis of crossing over.

Or

What is chromosome mapping ? Discuss the numericals based on gene mapping.

(5)

6. Describe the euploidy in plants.

Or

Discuss the DNA repair mechanism in plants.

7. Describe the molecular concept of gene.

Or

Write notes on Hardy Weinberg Law.

Total Pages—5

SG BOT-01

3rd Semester Examination, 2021

Time : 3 hours

Full Marks : 60

Answer from all the Parts as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(MODEL CBCS)

(BIODIVERSITY)

(MICROBES, ALGAE, FUNGI AND
ARCHEGONIATES)

PART – I

1. Answer the following questions in one word : 1 × 8

(a) Which type of genome is found in virus ?

(b) Give an example of "comma" shaped bacteria.

(Turn Over)

(2)

- (c) Which algae is a colonial algae ?
- (d) The black rust of wheat disease caused by _____.
- (e) In mosses, meiosis takes place during _____.
- (f) What is "organ of sui generis" ?
- (g) "Saccus" term is used for _____.
- (h) Inverted omega - shaped organization of vascular bundles is seen in _____.

PART - II

2. Answer any *eight* of the following questions within *two to three* sentences : $1\frac{1}{2} \times 8$

- (a) TMV
- (b) Fruiting body
- (c) *Vaucheria*
- (d) Thallus of Bryophytes
- (e) What is heterosporous

SG BOT-01

(Continued)

(3)

- (f) Stele
- (g) *Cycas* coralloid root
- (h) Lichen
- (i) Land habit of Bryophytes .
- (j) *Pinus* needle.

PART - III

3. Answer any *eight* of the following questions within 75 words : 2×8

- (a) Economic Importance of Bacteria.
- (b) Transformation
- (c) Economic Importance of Red algae.
- (d) Life cycle of *Nostoc*
- (e) Symbiotic Associations
- (f) *Marchantia*
- (g) Seed habit

SG BOT-01

(Turn Over)

(4)

- (h) Cycas morphology
- (i) Ecological importance of Gymnosperm.
- (j) Classification of *Gnetum*.

PART - IV

Answer all the following questions within 500 words :
6 × 4

4. Describe the Lytic and Lysogenic cycle of virus.

Or

Discuss the structure and reproduction of bacteria.

5. Describe the morphology and life cycle of *Oedogonium*.

Or

Discuss the life cycle of *Rhizopas*.

6. Discuss the anatomy and reproduction of *Marchantia*.

(5)

Or

Describe the heterospory and seed habit in pteridophytes.

7. Describe briefly the reproduction of *Pinus*.

Or

Discuss the life cycle of *Cycas*.

3rd Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your syllabus

Answer from **all** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

GROUP — A

(MODEL SYLLABUS)

(ANATOMY OF ANGIOSPERMS)

SECTION — A

1. Fill in the blanks with suitable answer : 1 × 8

(a) The term pharmacognosy was coined
by _____.

(Turn Over)

(2)

- (b) The wood character of different valuable timbers kept in wood library called _____.
- (c) Give an example of lateral meristem _____.
- (d) Who first introduced the term xylem _____.
- (e) Histogen theory was given by _____.
- (f) Name one example of reaction wood _____.
- (g) The organ involved in guttation is _____.
- (h) Name one example of mechanical tissue _____.

SECTION – B

2. Answer any *eight* questions in *two to three* sentences : $1\frac{1}{2} \times 8$
- (a) Define tissue.
 - (b) What is adcrustation ?
 - (c) Types of vascular bundles.
 - (d) Function of vascular combium.

(3)

- (e) What are tyloses ?
- (f) What is secondary growth ?
- (g) What is rhytidome ?
- (h) Define adaptive system.
- (i) What are laticifers ?
- (j) What do you mean by Inflexibility ?

SECTION – C

3. Answer any *eight* questions in *75* words : 2×8
- (a) Pharmacognesny.
 - (b) Ergastic substances.
 - (c) Tunica-Corpus theory.
 - (d) Krantz anatomy.
 - (e) Reaction wood.
 - (f) Composition of periderm.
 - (g) Dendrochronology.

(4)

- (h) Classification of stomata.
- (i) Glandular and non-glandular trichomes.
- (j) Lithocysts.

SECTION – D

Answer **all** questions : 6 × 4

4. What is tissue ? Describe the classification of tissue. 6

Or

Describe the introduction of plant anatomy.

5. Describe the organisation of shoot apex. 6

Or

Discuss the anatomy of monocot leaf.

6. Describe the anatomical adaptations of xenophytes. 6

(5)

Or

Describe the mechanical tissue system in plants.

7. Give an account of different types of woods. 6

Or

Discuss the development and composition of periderm.

GROUP – B

(**OLD SYLLABUS**)

(**ANATOMY OF ANGIOSPERMS**)

SECTION – A

1. Write short notes on : 2 × 6

- (a) Laticifers
- (b) Histogen theory
- (c) Rhytidome
- (d) Trichomes

(6)

(e) Wall ingrowths.

(f) Dendrochronology.

SECTION – B

Answer **all** questions : 12 × 4

2. Describe the introduction and scope of plant anatomy. 12

Or

Write notes on : 6 × 2

(i) Simple and complex tissues

(ii) Ergastic substances.

3. Describe the origin, development, arrangement and diversity of leaves. 12

Or

Write notes on : 6 × 2

(i) Organisation of roat apex

(ii) Types of vascular bundles.

(7)

4. Describe the secondary growth in stem. 12

Or

Write notes on : 6 × 2

(i) Types of rays and axial parenchyma

(ii) Early and late wood.

5. Describe the anatomical adaptation of Xenophytes. 12

Or

Write notes on : 6 × 2

(i) Epidermal tissue system

(ii) Classification of stomata.

3rd Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your Syllabus

Answer from **all** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

GROUP – A

(MODEL SYLLABUS)

(ECONOMIC BOTANY)

SECTION – A

1. Fill in the blanks : 1 × 8
- (i) Groundnut is usually raised as _____ crop,
sown from April to July.

(Turn Over)

(2)

- (ii) _____ is considered as the 'King of Indian Spices'.
- (iii) The botanical name of the tea plant is _____ *sinensis*.
- (iv) *Nicotiana tabacum* belongs to family _____.
- (v) The substances used for smoking are known as _____.
- (vi) All cereals belongs to the grass family and their characteristic fruit is _____ in which pericarp remains completely fused with seed coat.
- (vii) _____ is the ability of the wood to with stand attacks of fungi, bacteria or termites.
- (viii) *Gossypium* belongs to the family _____.

SECTION – B

2. Answer any *eight* questions : $1\frac{1}{2} \times 8$
- (i) Write the botanical names of any three millets.

(3)

- (ii) Define crop domestication.
- (iii) Write the botanical name and family of a spice which is obtained from the bark of a plant.
- (iv) Name three important narcotics obtained from Indian hemp.
- (v) Write the economic importance of linseed oil.
- (vi) What are the properties of mustard oil ?
- (vii) What is meant by setting ?
- (viii) What are the health hazards of tobacco ?
- (ix) What do you mean by ginning and combing in relation to the processing of cotton ?
- (x) What is the 'toughness' of a wood ?

SECTION – C

3. Answer any *eight* questions : 2×8
- (i) Explain the biological importance of legumes.

(4)

- (ii) Briefly describe sugar industry in India.
- (iii) How curing of tobacco is done ?
- (iv) How is opium obtained and how is it used ?
- (v) Classify the oils on the basis of their drying properties.
- (vi) Describe cold fat extraction method for essential oils.
- (vii) What are the different types of fibre according to their origin ?
- (viii) Distinguish between pine wood and teak wood.
- (ix) Briefly describe the importance of germplasm diversity.
- (x) Enumerate the uses of baggase.

SECTION – D

Answer **all** questions : 6 × 4

4. Describe the various centres of the origin of cultivated plants given by Vavilov. 6

(5)

Or

Describe the morphology, cultivation and propagation of potato plant.

5. Write a detailed account of the origin cultivation and processing of tea. 6

Or

Give an account of Cinchona as a plant of medicinal importance.

6. What are essential oils ? How they are different from fatty oils ? Give botanical names and families of two essential oil yielding plants. 6

Or

Describe the cultivation and economic importance of coconut.

7. Describe the processing and uses of rubber. 6

Or

What is timber ? Explain the reasoning of wood.

(6)

GROUP – B

(OLD SYLLABUS)

(ECONOMIC BOTANY)

SECTION – A

1. Write short notes on : 2 × 6
- (a) Germplasm
 - (b) Millets
 - (c) Botanical name and family of chick pea
 - (d) Botanical name and family of saffron
 - (e) Bioethanol
 - (f) Jute.

SECTION – B

Answer all questions : 12 × 4

2. Give an account of crop domestication and loss of genetic diversity in plants. 12

(7)

Or

Write notes on : 6 × 2

- (i) Centres of origin of crop plants
- (ii) Evolution of new crop varieties.

3. Describe the morphology and processing of sugarcane. 12

Or

Write notes on : 6 × 2

- (i) Importance of Legumes to man and ecosystem
- (ii) Nutritional values of cereals.

4. Describe the family, parts used and economic importance of fennel, clove and black pepper. 12

Or

Write notes on : 6 × 2

- (i) Extraction of essential oils

(8)

(ii) Botanical name, family and uses of coconut and soybean.

5. Describe the morphology, extraction and uses of Cotton. 12

Or

Write notes on : 6 × 2

(i) Tapping, processing and uses of para rubber

(ii) General account of Teak plant.

3rd Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your syllabus

Answer from **all** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

GROUP — A

(MODEL SYLLABUS)

(GENETICS)

SECTION — A

1. Fill in the blanks in *one* word : 1 × 8

(a) Mendel's work was published in a paper
entitled _____.

(Turn Over)

(2)

- (b) Evidence for cytoplasmic inheritance was first presented by _____.
- (c) The concept of linkage was first given by _____.
- (d) Crossing over takes place in _____ stage.
- (e) The variation in chromosome number or structure are called _____.
- (f) The individuals showing heritable change is known as _____.
- (g) Genes has two alternative forms are called _____.
- (h) The sum total of genes present in the reproductive individual of a population constitutes its _____.

SECTION – B

2. Answer any *eight* questions within *two to three* sentences : $1\frac{1}{2} \times 8$

SHBOT-07

(*Continued*)

(3)

- (a) Law of segregation
- (b) Plastid Inheritance
- (c) Multiple allele
- (d) Linkage
- (e) Crossing over
- (f) Aneuploidy
- (g) Mutagens
- (h) Define gene
- (i) Random mating
- (j) Gene pool.

SECTION – C

3. Answer any *eight* questions in *75* words : 2×8
- (a) Incomplete dominance
 - (b) Pleiotropism
 - (c) Shell coiling in snail

SHBOT-07

(*Turn Over*)

(4)

- (d) Cytological basis of crossing over
- (e) Position effect
- (f) Recombination frequency
- (g) Alkylating agents
- (h) Functional allelism
- (i) Genotype frequencies
- (j) Speciation.

SECTION – D

Answer the following questions
within **500** words :

6 × 4

4. Describe the history and principles of Inheritance. 6

Or

Describe the extrachromosomal inheritance
by giving suitable examples.

5. Discuss the linkage and crossing over in
plants. 6

(5)

Or

What is recombination frequencies. Describe
the two factor and three factor cross.

6. Give an account of polyploidy in plants. 6

Or

What is gene mutation ? Discuss the molecular
basis of mutations.

7. Discuss the classical vs molecular concepts of gene. 6

Or

What is population genetics ? Discuss the
Hardy-Weinberg law.

GROUP – B

(OLD SYLLABUS)

(GENETICS)

(6)

SECTION – A

1. Write short notes on : 2 × 6
- (a) Epistasis
 - (b) Epigenetics
 - (c) Sex linkage
 - (d) Position effect
 - (e) Base analogs
 - (f) Cis-trans complementation.

SECTION – B

Answer **all** questions : 12 × 4

2. Describe the history and principles of inheritance. 12

Or

Write notes on : 6 × 2

- (i) Extra chromosomal inheritance
- (ii) Autosomes and Sex-chromosomes.

(7)

3. What is crossing over ? Describe the cytological basis of crossing over. 12

Or

Write notes on : 6 × 2

- (i) Two factor and three factor cross
- (ii) Recombination frequency.

4. Describe a brief notes on variation in chromosome structure. 12

Or

Write notes on : 6 × 2

- (i) Molecular basis of mutation
- (ii) Aneuploidy.

5. Describe briefly on classical and molecular concepts of gene. 12

(8)

Or

Write notes on :

6 × 2

- (i) Role of natural selection
 - (ii) Allele frequencies.
-

2019

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(ANATOMY OF ANGIOSPERMS)

SECTION — A

1. Write short notes on :

2 × 6

(a) Hydathodes

(b) Sclereids

(c) Intercalary meristem

(Turn Over)

- (d) Axial parenchyma
- (e) Tyloses
- (f) Epicuticular Wax.

SECTION – B

Answer all questions : 12 x 4

2. Give an account of cytodifferentiation of tracheary and sieve elements. 12

Or

Write notes on : 6 x 2

- (i) Adcrustation and incrustation
- (ii) Pit and Plasmodesmata.

3. Discuss on evolutionary concept of shoot apex organization. 12

Or

Write notes on : 6 x 2

- (i) Kranz Anatomy
- (ii) Origin and Development of leaf.

4. Discuss on development and composition of periderm, rhytidome and lenticels. 12

Or

Write notes on : 6 x 2

- (i) Heart wood and Sap wood
- (ii) Secondary growth in Dicot root.

5. Give an account of structure and classification of stomata. 12

Or

Write notes on : 6 x 2

- (i) Anatomical adaptation in hydrophytes
- (ii) Functional aspects of trichomes.

2019

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(ECONOMIC BOTANY)

SECTION – A

1. Write short notes :

2 x 6

- (a) Acclimatization
- (b) Scientific name and family of Pigeon pea
- (c) Essential oils
- (d) Importance of clove.

(Turn Over)

(2)

- (e) Uses of Digitalis
- (f) Scientific name and family of teak plant.

SECTION – B

Answer all questions : 12 × 4

2. Discuss on the concept of centres of origin of crops with reference to Vavilov's work.

Or

Write notes on :

- (i) Significance of plant introduction
- (ii) Importance of Germplasm diversity.

3. Discuss about origin, morphology, cultivation, processing and economic importance of Rice Plant.

Or

Write notes on :

- (i) Economic importance of sugarcane
- (ii) Economic importance of potato.

SHBOT-06

(Continued)

SHBOT-06

(3)

4. Discuss about morphology and economic importance of groundnut.

Or

Write notes on :

- (i) Economic importance of black papper
- (ii) Economic importance of Mustard.

5. Discuss about morphology, processing uses and health hazards of Tobacco.

Or

Write notes on :

- (i) Biofuel plants
- (ii) Scientific name, morphology and uses of jute.

BA-2,000

2019

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(GENETICS)

SECTION – A

1. Write short notes on :

2 × 6

(a) Karyotype

(b) Pleiotropy

(c) Recombination frequency

(d) Transposons

(Turn Over)

(2)

- (e) Cistron
- (f) Genetic drift.

SECTION – B

Answer all questions : 12 x 4

2. Explain the morphology of chromosome with diagram. 12

Or

Write notes on :

- (i) Chromosome theory of inheritance
- (ii) Multiple allelism.

3. What is sex linkage ? Discuss types of sex linkage with examples. 12

Or

Write notes on :

- (i) Cytological basis of crossing over
- (ii) Gene mapping.

SHBOT – 07

(Continued)

(3)

4. Discuss about types and significance of heteroploidy. 12

Or

Write notes on :

- (i) Types and roles of mutagens
- (ii) Importance of DNA repair.

5. Discuss about Hardy-Weinberg principle and its importance in population genetics. 12

Or

- (a) Modern concept on Gene
- (b) Cis-Trans complementation test.

SHBOT – 07

BA – 2,000

2019

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

**(BIODIVERSITY, (MICROBES, ALGAE,
FUNGI AND ARCHEGONIATES))**

SECTION – A

1. Write short notes on following : 2 x 6

(a) Endospore

(b) Plasmid

(c) Thallus of Vaucheria

(d) Cleistothecium

(Turn Over)

- (e) Protonema
- (f) Coralloid root.

SECTION – B

Answer all questions : 12 x 4

2. Describe the process of multiplication in bacteriophage.

Or

Write notes on :

- (i) Transduction
- (ii) Economic importance of Bacteria.

3. Describe the life cycle and importance of Agaricus.

Or

Write notes on :

- (i) Morphology and importance of Nostoc
- (ii) Significance of mycorrhiza.

4. Discuss ecology and economic importance of Bryophytes with special reference to sphagnum.

Or

Write notes on :

- (i) Gemma cup
- (ii) Gametophyte of funaria.

5. Describe about morphology, anatomy and reproduction in pteris.

Or

Write notes on :

- (i) Cycas ovule
- (ii) Rhynia as primitive pteridophyte.

Total Pages—3

SH BOT-05

2018

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(ANATOMY OF ANGIOSPERMS)

SECTION – A

1. Answer *all* of the following questions : 2×6

(a) Plant anatomy and systematic botany

(b) Hydathode

(c) Phloem fibres

(Turn Over)

(2)

- (d) Trichomes
- (e) Sap wood
- (f) Dendrochronology.

SECTION - B

Answer all questions: 12 x 4

2. What is Forensic Botany? Give any one case where Forensic Botany has been used as evidence in the court of law.

Or

Write notes on the following :

- (i) Sieve Elements and Plasmodesmata.
 - (ii) Pits and Plasmodesmata.
3. What are Permanent Tissue? How they are classified? How could you differentiate them from Meristematic Tissue.

SHBOT-05

(Continued)

(3)

Or

Write notes on the following :

- (i) Korper-Kappe Theorie
- (ii) Types of Vascular Bundle.

4. What are Annual rings? In what kind of plants do they occur? Give at least two examples of Indian wood which have annual rings.

Or

Write notes on the following :

- (i) Development of vascular tissue
 - (ii) Heart wood and sap wood.
5. Describe briefly the Anatomical adaptation of Xerophytes.

Or

Write notes on the following :

- (i) Epicuticular Wax
- (ii) Trichomes.

SHBOT-05

BA-1,700

Total Pages—3

SHBOT-06

2018

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(ECONOMIC BOTANY)

SECTION - A

1. Answer *all* the following questions : 2 x 6
- (a) Objectives of plant introduction
 - (b) Wetland rice cultivation
 - (c) Economic importance of Legumes

(Turn Over)

(2)

- (d) Biodiesel
- (e) Baggase
- (f) Para rubber.

SECTION - B

Answer all questions : 12 x 4

2. Write briefly about Vavilov's work on Plant Introduction.

Or

Write notes on the following :

- (i) Evolution of crop plants varieties
- (ii) Importance of germ plasm diversity.

3. Give an account of origin, morphology processing and uses of wheat.

Or

Write notes on the following :

- (i) Processing of sugarcane
- (ii) Importance of legumes to man and ecosystem.

SH BOT-06

(Continued)

(3)

4. Write an account of the essential oils. How is it distinguished from fatty oils.

Or

Write notes on the following :

- (i) Properties and uses of groundnut oil
- (ii) Properties and uses of Mustard oil.

5. Describe the origin, morphology, processing and uses of cotton.

Or

Write notes on the following :

- (i) Retting
- (ii) Processing of coir.

SH BOT-06

BA-1.700

Total Pages—3

SHBOT-07

2018

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(GENETICS)

SECTION - A

1. Answer *all* of the following questions : 2×6

(a) Dominance

(b) Multiple alleles

(c) Molecular basis of gene interaction

(Turn Over)

(2)

- (d) Duplication
- (e) Neo-Darwinism
- (f) Non-disjunction of X chromosome and chromosome theory of heredity.

SECTION -- B

Answer all the questions : 12 x 4

2. Give an account of principles of Mendelism derived from Monohybrid and Dihybrid cross.

Or

Write notes on the following :

- (i) Epistasis
- (ii) Kappa particle in paramaecium.

3. Explain Criss-Cross inheritance giving a suitable example. Discuss the reason for this inheritance pattern.

SHBOT-07

(Continued)

(3)

Or

Write notes on the following :

- (i) Crossing over
 - (ii) Sex linkage in Man.
4. Discuss the mechanism of mutation at molecular level.

Or

Write notes on the following :

- (i) Allopolyploidy
 - (ii) Role of mutation in evolution.
5. What is Hardy-Weinberg Law ? Explain it with suitable examples.

Or

Write notes on the following :

- (i) Genetic Drift
- (ii) Allele frequencies.

SHBOT-07

BA-1,700

2018

(3rd Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

**(BIODIVERSITY, MICROBES, ALGAE,
FUNGI AND ARCHEGONIATE)**

SECTION – A

1. Answer of the following : 2×6

- (a) Archaeobacteria
- (b) Volvox colony
- (c) Nutrition in Fungi
- (d) Economic importance of penicillium
- (e) Adaptation to land habit of Bryophytes
- (f) Ascus.

(Turn Over)

(2)

SECTION - B

Answer all questions : 12 x 4

2. Describe the genetic recombination in bacteria.

Or

Write notes on the following :

- (i) RNA virus
- (ii) DNA virus.

3. Discuss the life cycle of Puccinia.

Or

Write notes on the following :

- (i) Role of Algae in agriculture
- (ii) Nostoc colony.

4. Give an account of sporophytic generation in Funaria.

SGBOT-01

(Continued)

(3)

Or

Write notes on the following :

- (i) Thallus structure of Marchantia
- (ii) Range of thallus organization in Bryophytes.

5. What is Heterospory ? Discuss the reproduction by spores in Selaginella.

Or

Write notes on the following :

- (i) Rhynia an its primitive character
- (ii) Male cone of Pinus.

SGBOT-01

BA-900

SHBOT 05

2017

(Semester-III)

Time : 2½ hours

Full Marks : 60

The figures in the right-hand margin indicate marks.

Answer from both the Sections as per direction.

(Anatomy of Angiosperms)

SECTION—A

Answer all questions : 2 × 6

1. Answer *all* of the following :

- (a) Stomata
- (b) Bulliform cells
- (c) Sieve cells
- (d) Radial Vascular Bundle
- (e) Lenticel
- (f) Heart wood.

(Turn Over)

SECTION—B

Answer all questions :

12 × 4

2. Write an essay on the application of plant anatomy in systematics.

Or

Write notes on the following :

- (a) Tracheary elements
- (b) Adcrustation and Incrustation.

3. What is meristematic tissue ? With the help of suitable diagram discuss the organisation of shoot and root apices of plants.

Or

Write notes on the following :

- (a) Cytohistological zonation theory
- (b) Kranz anatomy.

4. What is Secondary Growth ? Describe the secondary growth in Dicot stem.

SHBOT 05

(2)

(Continued)

Or

Write notes on the following :

- (a) Secondary growth in Monocot stem
 - (b) Tyloses.
5. Describe briefly the ecological adaptations in hydrophyte.

Or

Write notes on the following :

- (a) Trichomes
- (b) Types of stomata.

SHBOT 05

(3)

BA-1,200

2017

(Semester-III)

Time : 2½ hours

Full Marks : 60

The figures in the right-hand margin indicate marks.

Answer from both the Sections as per direction.

(Economic Botany)

SECTION—A

Answer all questions : 2 × 6

1. Answer *all* the following :

- (a) Importance of Germplasm diversity
- (b) Byproduct of sugar industry
- (c) Para Rubber
- (d) Biological importance of Legumes
- (e) Black pepper and its uses
- (f) Two important plants belonging to Cereals.

(Turn Over)

SECTION—B

Answer all questions : 12 x 4

2. What is the concept of centres of origin of cultivated plants? Describe the 08 centres of origin of cultivated plants as proposed by Vavilov.

Write notes on the following :

- (a) Patterns of evolution of new crops
 - (b) Cause of genetic diversity
3. Give an account of origin, morphology processing and uses of Rice.

Or

Write notes on the following :

- (a) Millets
 - (b) Products and byproducts of sugarcane
4. Give a general account and extraction methods of essential oil.

SHBOT 06

(2)

(Continued)

Or

Write notes on the following :

- (a) Uses and extraction of coconut oil
 - (b) Uses of groundnut
5. Describe the origin, morphology, extraction and uses of Jute.

Or

Write notes on the following :

- (a) Processing of Rubber Tapping
- (b) Processing of Cotton.

SHBOT 06

(3)

BA-1,200

SHBOT 07

2017

(Semester-III)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

The figures in the right-hand margin indicate marks.

Answer from both the Sections as per direction.

(Genetics)

SECTION—A

Answer all questions :

2 × 6

1. Answer of the following :

- (a) Why Mendel selected pea plants ?
- (b) Lethal Alleles
- (c) Gene interaction
- (d) Chromosome theory of heredity
- (e) Reciprocal translocation
- (f) Gene pool.

(Turn Over)

SECTION—B

Answer all questions :

12 x 4

2. Describe extrachromosomal inheritance with respect to chloroplast mutation in *Mirabilis*.

Or

Write notes on the following :

- (a) Multiple Alleles
- (b) Pleiotropy

3. Describe coupling and repulsion theory of Linkage and crossing over.

Or

Write notes on the following :

- (a) Sex linkage
- (b) Criss-Cross inheritance

4. Define Polyploidy. Discuss its role in evolution of crop plants.

SHBOT 07

(2)

(Continued)

Or

Write notes on the following :

- (a) Types and cytological effects of Inversion.
- (b) Mutagens

5. State and explain Hardy-Weinberg law. Add a note on its application.

Or

Write notes on the following :

- (a) Cis-Trans complementation test
- (b) Genotype frequencies.

SHBOT 07

(3)

BA-1,200

SGBOT 01

2017

(Semester-III)

Time : 3 hours

Full Marks : 80

The figures in the right-hand margin indicate marks.

Answer from both the Sections as per direction.

**(Biodiversity, Microbes, Algae, Fungi
and Archeonite)**

SECTION—A

Answer all questions :

2 × 8

1. Answer all of the following :

(a) Prions

(b) Akinete

(c) Binary fission

(d) Gemma cup

(e) Symbiotic Association in Lichen

(Turn Over)

(f) Vascular and carinal canals

(g) Volex colony

(h) Nutrition in Fungi.

SECTION—B

Answer all questions :

16 × 4

2. Give an account of the life cycle of Bacteriophage.

Write notes on the following :

(a) Role of Bacteria in Agriculture

(b) Cyanobacteria

3. Give an account of morphology and sexual reproduction in Fucus.

Or

Write notes on the following :

(a) Sexual reproduction in Rhizopus

(b) Basidiocarp of Agaricus

4. Describe the reproduction in Marchantia.

Or

Write notes on the following :

(a) Sporophyte of Funaria

(b) Economic importance of Bryophytes

5. Discuss the stelar evolution in Pteridophytes.

Or

Write notes on the following :

(a) Cooksonia and its primitive characters

(b) Economic importance of Gymnosperms.