

2021

BOTANY

(Honours)

Paper-CC-Bot-V

(*Anatomy of Angiosperms*)

Full Marks : 60

Time : 3 hours

Answer from **all** the questions as directed.

*The figures in the right-hand margin
indicate marks.*

1. Answer *all* the questions : 1 × 8

(a) The only living component of xylem tissue is ———.

(b) The cytoplasmic connections between the cell is maintained by ———.

(2)

(c) The cambium present inside the vascular bundle is called ———.

(d) Mesophyll cell is not differentiated in ——— leaf.

(e) Passage cells are found in ——— layers of root.

(f) The central dark coloured part of wood is called ———.

(g) Guttation takes place through ———.

(h) Latex secreting cells are called ———.

2. Answer any *eight* questions within 2 to 3 sentences : 1.5 × 8

(3)

(a) Sclerenchymatous cell

(b) Pits

(c) Incrustation

(d) Concentric vascular bundle

(e) Histogen theory

(f) Secondary cambium

(g) Exodermis

(h) Dendrochronology

(i) Epicuticular wax

(j) 'I' girder in mechanical tissue

(4)

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

- (a) Ergastic substances
- (b) Transfer cells
- (c) Tunica-corpus theory
- (d) Seasonal activity of cambium
- (e) Anatomy of monocot leaf
- (f) Quiescent centre
- (g) Periderm
- (h) Anatomy of Dicot Root

(5)

(i) Rhytidome

(j) Mechanical Tissue system

4. Long answer questions within 500 words :

Describe the applications of anatomy in systematics and pharmacognosy. 6

Or

Describe the cytodifferentiation of tracheary element.

5. What is anomalous secondary growth ? Describe the causes of anomalous secondary growth. 6

Or

Describe various types of vascular bundles found in plants.

(6)

6. Describe organization of root apex.

6

Or

What is wood ? Describe various types of wood found in plants.

7. Describe anatomical adaptations of xerophytes.

6

Or

What is secretory tissues ? Describe any two types of secretory tissues found in plants.

2021

BOTANY

(Honours)

Paper-CC-Bot-VI

(*Economic Botany*)

Full Marks : 60

Time : 3 hours

Answer from **all** the questions as directed.

*The figures in the right-hand margin
indicate marks.*

1. Answer *all* the questions : 1 × 8

(a) The botanical name of the paddy is
_____.

(b) Bagasses are the byproduct of _____
industry.

(2)

- (c) _____ is the alkaloid present in Tobacco.
- (d) Quinine is extracted from the bark of _____.
- (e) Linseed oil is a _____ oil.
- (f) Botanical name of groundnut is _____.
- (g) The commercial jute fibres are _____ fibres.
- (h) Rubber is extracted from the _____ of the *Hevea* plant.

2. Write the answers of *eight* questions within 2 to 3 sentences : 1.5 × 8

- (a) Centre of origin
- (b) Morphology of sugarcane plant
- (c) Plant Introduction

(3)

- (d) Two drug yielding plants.
- (e) Uses of Tea
- (f) Types of oils
- (g) Uses of Groundnut oil
- (h) Tapping of rubber
- (i) Classification of fibre
- (j) Morphology of Tobacco plant

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

- (a) Byproducts of sugarcane industry.
- (b) Loss of genetic diversity
- (c) Propagation of potato
- (d) Write the economic importance of fennel

(4)

- (e) Health hazards of Tobacco
- (f) Botanical name and family of Linseed
- (g) Uses of Brassica oil
- (h) Processing of rubber
- (i) Extraction of Jute
- (j) Therapeutic uses of Cannabis

4. Long answer questions within 500 words :

✓ Describe the cultivation process of Rice. 6

Or

Describe the cultivation and uses of Potato.

5. Describe the processing and uses of Coffee. 6

Or

(5)

Describe parts used and economic importance of any two spices.

6. Describe the extraction and uses of coconut oil. 6

Or

Describe the extraction and uses of essential oil.

7. Describe the extraction and uses of cotton fibre. 6

Or

Describe the importance of teak as a timber yielding plant.

2021

BOTANY

(Honours)

Paper-CC-Bot-VII

(Genetics)

Full Marks : 60

Time : 3 hours

Answer from all the questions as directed.

***The figures in the right-hand margin
indicate marks.***

1. Answer *all* the questions : 1 × 8

(a) When both the alleles of a gene express themselves in heterozygous, condition is called ____.

(b) When a single gene affect more than one character the condition is called ____.

(Turn Over)

(2)

- (c) The occurrence of crossing over at a point reduce the chance of another crossing over taking place in a neighbouring place is called ———.
- (d) The tendency of gene to stay together during inheritance is called ———.
- (e) A physical or chemical agent induce mutation called ———.
- (f) A DNA segment which is capable of changing its location within or between chromosomes ———.
- (g) When mutation caused without application of any mutagen called ———.
- (h) Random fluctuation in gene frequencies of a population due to chance or sampling error is called ———.

(Continued)

(3)

2. Answer any *eight* questions within 2 to 3 sentences : 1.5 × 8

- ✓(a) Incomplete dominance
- ✓(b) Sex chromosomes
- ✓(c) Recessive traits
- (d) Linkage group
- (e) Recombination frequency
- ✓(f) Deletion
- ✓(g) Gene mutation
- (h) Types of mutagens
- ✓(i) Gene pool
- ✓(j) Genotype frequencies

III-CC-Bot-7

(Turn Over)

(4)

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

- (a) Chloroplast mutation
- (b) Polygenic inheritance
- (c) Interaction of genes
- (d) Complete linkage
- (e) Crossing over
- (f) Translocation
- (g) Role of transposons in mutation
- (h) Intercalating agent
- (i) Hardy-Weinberg law
- (j) Genetic variation

(5)

4. Long answer questions within 500 words :

Describe Mendelian principles of Inheritance. 6

Or

What is extrachromosomal Inheritance ?
Describe mitochondrial mutations in Yeast.

5. Describe the types and physical basis of Linkage. 6

Or

Describe chromosome mapping with examples.

6. Describe any three types of numerical changes in chromosome. 6

Or

Describe DNA repair mechanism.

2020 CCH-201-5
Botany

CCH-BOT-5

F. marks-60

Time-3 hour

1. Answer any eight of the following questions
1x8

- (a) Parenchyma cells are characterized by the presence of —.
- (b) The tissue provided mechanical strength to the plant is —.
- (c) In open vascular bundle — is present.
- (d) Histogen theory was proposed by whom.
- (e) Radial vascular bundle is the characteristic of —.
- (f) Determination of age of tree by counting no. of annual rings is called what.
- (g) Sunken stomata is the characteristic feature of —.
- (h) The cells possess crystalline called —.
- 2. Answer any eight questions or the following within two to three sentences.
1.5x8
- (a) Collenchymatous cells
- (b) Plasmodesmata.
- (c) Vascular cambium.
- (d) conjoint, collateral and open vascular bundle

- (e) Endodermis
- (f) Lenticels
- (g) Early wood
- (h) Cuticle
- (i) Hydroids.
- (j) Bundle sheath cells.

3. Answer any eight questions of the following within 75 words.
2x8

- (a) Complex tissue
- (b) Adaptation
- (c) Kranz anatomy
- (d) Anatomy of monocot stem.
- (e) Root cap.
- (f) Sap wood.
- (g) Stomata.
- (h) Trichomes
- (i) Englemann's experiment.
- (j) Types of vascular bundle.

4. Answer any four questions. 6x4

- (a) What is plant anatomy 2. Delineate application of plant anatomy in systematic and botanical.

OR
What is tissue 2. Delineate the classification of tissue with examples.

- (b) Delineate the organization of root apex.
OR
Delineate the process of root-stem transition.

(3)

③ Describe the primary and secondary growth in dicot root.

Describe the ^{or} development and comparison of periderm.

④ What is adaptive tissue? Describe the anatomical adaptation or hydrophobic with examples.

Describe the ^{or} mechanical tissue. Describe the distribution of mechanical tissue in plant organs.

2020

Botany

111-307-6

Remarks - 60

Time - 3 hour

1. Answer any eight of the following questions. 1x8

- ① All legumes belong to family —.
- ② Botanical name of wheat is —.
- ③ — is known as king of Indian spices.
- ④ Tea and coffee are regarded as — beverages.
- ⑤ Botanical name of mustard is —.
- ⑥ The family of coconut is —.
- ⑦ Opium is obtained from — of capsule — of Papaver.
- ⑧ The cotton fibres are obtained from — of cotton plants.

2. Answer any eight questions of the following with in two or three sentences. 1.5x8

- ① Germ plasm diversity.
- ② Plant domestication.
- ③ Propagation of potato.
- ④ Write the family and parts used of clove.
- ⑤ Write the botanical name and uses of coffee.
- ⑥ Fatty oils

③ Para rubber.

④ molasses.

① Teak

⑧ Write the name of the drug and its medicinal value obtained from cinchona.

3. Answer any eight questions of the following with in 75 words. 2x8

- ② Important of legumes to ecosystems and human beings.
- ⑥ utilization of rice.
- ⑦ Saffron.
- ④ Digitalis
- ⑤ Uses of coconut oil
- ⑤ classification of fibres.
- ⑧ Extraction of cotton.
- ⑤ Plant introduction.
- ⑦ cultivation of sugarcane
- ⑧ Timber plants.

4. Answer any four questions 6x4

③ What is centre of origin 2. Describe the importance of centre of origin with reference to Vavilov's work.

OR
Describe the processing of sugarcane and the byproducts of sugarcane industry.

②

⑥ Describe the morphology, processing and uses of Tea.

Describe the ^{or} processing, uses and health hazards of Tobacco.

⑦ Describe briefly about the extraction and uses of fatty oils with reference to groundnut ^{or} write briefly about the extraction methods of kerosene oil and compare it with fatty oils.

⑧ Describe the process of tanning, processing and uses of natural rubber ^{or} Describe extraction and uses of Jute fibres.

2020

NOTAMY

LEH-30T-7

Exams-60

Time-3 hours

1. Answer any eight of the following questions. 1x8

- (a) The gene causes the death of the organism called —.
- (b) The trait that is not expressed in a heterozygote condition.
- (c) Who discovered the concept of linkage.
- (d) The exchange of chromosome segment in prophase-I is called —.
- (e) Structural changes in chromosome causing loss of part of chromosome is called —.
- (f) Numerical changes in chromosomes in chromosome number is called —.
- (g) The sum total of genes in reproductive gametes of population is called —.
- (h) The change in allele frequency in a population from generation to generation due to chance events called —.
- (i) Answer any eight questions of the following within two to three sentences. 1.5 x 8
- (a) Dominant trait.
- (b) Autosomal.
- (c) Repulsion phase.

- (d) Duplication.
- (e) Copying phase.
- (f) Position effect.
- (g) Transposon.
- (h) Genotype frequency.
- (i) Chromosomal mutation.
- (j) Multiple alleles.

3. Answer any eight questions of the following within 25 words. 2x8

- (a) Incomplete dominance.
- (b) Cytoplasmic inheritance.
- (c) Polytrophy
- (d) Interference
- (e) Genetic recombination
- (f) mutagen.
- (g) CIs method.
- (h) coincidence
- (i) structure of DNA, all points.
- (j) DNA repair mechanism.

4. Answer any four questions. 6x4

- (a) Describe the principle and chromosomal theory of inheritance. OR
- (b) What is interaction of genes? 2. Describe any three types with examples.
- (c) What is recombinant frequency? 2. Describe the factors affecting recombinant frequency. OR
- (d) Describe the cytological basis of crossing over.

(2)

③ Determine any three types of structural changes in chromosome.

^{OR}
What is gene mutation? 2. Determine the types of gene mutation.

④ Determine classified V's molecular concept of gene.

OR

Determine Hardy-Weinberg law in population genetics.

2022

BOTANY

Paper-CC-Bot-V

(Anatomy of Angiosperm)

Full Marks : 60

Time : 3 hours

Answer all questions.

*The figures in the right-hand margin
indicate marks.*

1. Answer *all* the questions : 1 × 8

☒ (a) The phloem cell responsible for short distance transport of metabolites are called ____.

☒ (b) Tissues in which different cells perform a common function are called ____.

☒ (c) Tunica-Corpus theory was proposed by ____.

(Turn Over)

(2)

- (d) Kranz anatomy is found in _____ plants.
- (e) Pith is well developed in _____ roots.
- (f) Sunken stomata are characteristics feature of _____.
- (g) The study of annual growth ring is called _____.
- (h) Stinging hairs are specialized _____ cells.

2. Answer any *eight* questions within 2 to 3 sentences : 1.5×8

- (a) Define systematics.
- (b) Adcrustation
- (c) Plasmodesmata
- (d) Conjoint collateral vascular bundle
- (e) Fascicular cambium

(3)

- (f) Casparian strips
- (g) Tyloses
- (h) Phelloderm
- (i) Cuticle
- (j) Hydathodes

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

- (a) Simple tissues
- (b) Tracheary elements
- (c) Structure of cambium
- (d) Differences between dicot and monocot leaf
- (e) Korper-Kappe theory
- (f) Differences between dicot stem and monocot stem

(4)

(g) Exodermis

(h) Anatomy of Dicot roots

(i) Trichomes

(j) Laticifers

Answer the long questions within
500 words :

4. Describe the classification of tissues. 6

Or

Application of plant anatomy in systematics and forensics.

5. Describe the organization of shoot apex. 6

Or

Describe the root-stem transition method in detail.

(5)

6. Describe secondary growth in roots. 6

Or

~~Describe the development and composition of periderm.~~

7. Describe the anatomical adaptations of Xerophytes. 6

Or

~~Describe the mechanical tissue system in plants.~~

2022

BOTANY

Paper-CC-Bot-VI

(*Economic Botany*)

Full Marks : 60

Time : 3 hours

Answer all questions.

*The figures in the right-hand margin
indicate marks.*

1. Answer *all* the questions : 1 × 8

(a) Crop plants evolved from wild species proposed by ———.

(b) Pulses belong to the family ———.

(c) Opium obtained from the ——— of the unripe capsule.

(2)

- (d) Tea and coffee are —— beverages.
 - (e) The oil which is volatile in nature called ——.
 - (f) The botanical name of Linseed is ——.
 - (g) Cotton fibres are the epidermal prolongation of ——.
 - (h) Tapping is done in —— years old Rubber plant.
2. Answer any *eight* questions within 2 to 3 sentences : 1.5 × 8
- (a) Germplasm diversity
 - (b) Importance of Legumes to Ecosystem
 - (c) Write the family and parts used in clove.
 - (d) Therapeutic use of cinchona

(3)

- (e) Crop domestication
 - (f) Two uses of Cannabis
 - (g) Two characters of essential oil
 - (h) What is pararubber ?
 - (i) Botanical name of Teak
 - (j) Two uses of Coconut oil
3. Answer any *eight* questions within 75 words : 2 × 8
- (a) Uses of potato
 - (b) Major plant introductions
 - (c) Cultivation of Rice
 - (d) Processing of Coffee
 - (e) Processing of Tobacco
 - (f) Uses of Papaver

(4)

(g) Two differences between essential oil and fatty oil.

(h) Botanical name and family of Brassica.

(i) Properties of Teak wood

(j) Classification of fibres

Long answer questions within 500 words :

4. Describe the processing of sugarcane and write the products and byproducts of sugarcane. 6

Or

Describe the concept of centre of origin with reference to Vavilov's work.

5. Describe the morphology and processing of Tea. 6

Or

Describe the parts used and economic importance of Black Pepper.

(5)

6. What is oil yielding plants ? Describe the extraction and uses of Linseed oil. 6

Or

Describe the extraction, uses and health implications of Ground nut oil.

7. Describe the tapping, processing and uses of Natural rubber. 6

Or

Describe morphology and extraction of Jute fibre.

2022

BOTANY

Paper-CC-Bot-VII

(*Genetics*)

Full Marks : 60

Time : 3 hours

Answer all questions.

*The figures in the right-hand margin
indicate marks.*

1. Answer *all* the questions : 1 × 8

(a) The failure of plants to produce male gametes or pollen grains (functional) is called ———.

(b) Kappa particles are ——— bacterium found in the cytoplasm of paramecium.

(2)

- (c) The unit of map distance in a genetic map is ____.
 - (d) The coupling and repulsion theory was given by ____.
 - (e) The inversion in which inverted segment does not include centromere is called ____.
 - (f) The most efficient method used for detection of sex-linked lethal mutation is called ____.
 - (g) The proportion of different alleles of a gene in a population is called ____.
 - (h) The evolutionary process of formation of new and distinct species is called ____.
2. Answer any *eight* questions within 2 to 3 sentences:
1.5 × 8
- (a) Codominance

(3)

- (b) Multiple alleles
 - (c) Autosomes
 - (d) Crossing over
 - (e) Repulsion theory
 - (f) Duplication
 - (g) Euploidy
 - (h) Gene mutation
 - (i) Gene pool
 - (j) Genetic drift
3. Answer any *eight* questions within 75 words:
2 × 8
- (a) Extrachromosomal Inheritance
- (b) Lethal alleles
- (c) Law of Independent Assortment

(4)

- (d) Coupling theory
- (e) Incomplete Linkage
- (f) Position effect
- (g) Aneuploidy
- (h) What is DNA repair mechanism ?
- (i) What is mutagen ?
- (j) What is evolutionary genetics ?

Answer the long questions within
500 words :

4. Describe the chromosomal theory of Inheritance. 6

Or

Describe cytoplasmic male sterility
with examples.

(5)

5. Describe the cytological basis of crossing over. 6

Or

Give an account of procedures in pre-paring a chromosome linkage map with the help of three factor crosses.

6. Describe any three types of structural changes in chromosome. 6

Or

Describe the role of transposons in mutation.

7. Describe classical Vs molecular concept of gene. 6

Or

Describe Hardy-Weinberg Law in evolutionary genetics.
