

Total No. of Printed Pages:03

SUBJECT CODE NO:- B-2145
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination March/April 2018
Botany Paper- XV/
Cell Biology and Molecular Biology

[Time: 1:30 Hours]

[Max.Marks: 50]

- N.B Please check whether you have got the right question paper.
1) Attempt all questions.
2) Draw neat and well-labelled diagram wherever necessary.
- Q.1 Describe structure and functions of nucleus. 20
- OR**
- Write in detail structure of m-RNA and t-RNA. 20
- Q.2 What are chromosomal aberrations? Add a note on euploidy and aneuploidy. 20
- OR**
- Write short note on (any four) 20
- a) Cell wall
 - b) Lysosome
 - c) Cell cycle
 - d) Nucleotide
 - e) Nucleosome model
 - f) Lampbrush chromosome
- Q.3 Multiple Choice Questions. 10
- 1) Prokaryotic cell lacks-----
 - a) Nuclear membrane
 - b) Nucleolus
 - c) Membrane bound organelles
 - d) All the above
 - 2) The reticulate network which provides skeletal support is of -----
 - a) ER
 - b) Golgi complex
 - c) Lysosomer
 - d) Chloroplast

- 3) In plant cell, cell wall is made up -----
- Chitin
 - Amino acids
 - Cellulose
 - Protein
- 4) ----- is known as suicide bag.
- Lysosome
 - Mitochondria
 - Ribosome
 - Nucleus
- 5) Replication of DNA is initiated by a -----
- DNA primer
 - RNA primer
 - Ligase
 - Protein
- 6) Terminalization of chiasmata takes place in -----
- Pachytene
 - Diplotene
 - Zygotene
 - Diakinesis
- 7) Dragging of chromosomes at pole takes place with the help of -----
- Centriole
 - DNA
 - Chromatin
 - Spindle fibre
- 8) Chromosomal puff is an example of -----
- Euchromatin
 - Heterochromatin
 - Kinetochores
 - Telomeres

9) ----- is a structural aberration of chromosome.

- a) Nullisomy
- b) Monosomy
- c) Trisomy
- d) Deletion

10) Centromere is present at the terminal end in the -----

- a) Acentric
- b) Telocentric
- c) Metacentric
- d) Sub metacentric

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SUBJECT CODE NO: B-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination March/April 2018
Elective Paper
Botany Paper- XVI
A Diversity of Angiosperms - I

[Time: 1:30 Hours]

[Max.Marks: 50]

N.B Please check whether you have got the right question paper.

- 1) Attempt all questions.
- 2) Draw neat and well labelled diagram wherever necessary.

Q.1 Define Biodiversity. Add a note on its causes of loss along with conservation measures. 20

OR

What is hotspot? Comment on threatened categories and its types you studied.

Q.2 Explain in details Bentham and Hooker's system of classification. Add a note on merits and demerit. 20

OR

Write short notes on any four.

- a) Endemism
- b) Cropland and agricultural diversity.
- c) Floral characters of Lythraceae.
- d) Economic importance of Rutaceae
- e) Diagnostic characters of family Apiaceae
- f) Floral diagram and floral formula in Capparidaceae.

Q.3 Multiple choice questions: 10

1. _____ hot spot located in India.
 - a) Eastern Ghats
 - b) Western Himalaya
 - c) Eastern Himalaya
 - d) None of these

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2. *Nepenthes khasiana* is endemic to _____.
 - a) Sahayadri hills
 - b) Satpada hills
 - c) Balaghat
 - d) Khasi hills

3. Gir national park is located in which state.
 - a) Haryana
 - b) Gujarat
 - c) Maharashtra
 - d) Kerala

4. Leading mega diversity centre Brazil hubs _____ number plant species.
 - a) 45,000
 - b) 25,000
 - c) 35,000
 - d) 55,000

5. Cruciform corolla is present in the family _____.
 - a) Lythraceae
 - b) Combretaceae
 - c) Magnoliaceae
 - d) Brassicaceae

6. Cremocarp fruit type is commonly found in _____ family.
 - a) Brassicaceae
 - b) Magnoliaceae
 - c) Apiaceae
 - d) None of these

7. Indefinite stamens is common characters of _____ family.
 - a) Magnoliaceae
 - b) Brassicaceae
 - c) Rhamnaceae
 - d) None of these

8. Tricarpellary condition is common character of the family _____.
 - a) Brassicaceae
 - b) Capparidaceae
 - c) Cucurbitaceae
 - d) None of these

9. Siliqua fruit type is observed in _____ plants.

- a) Brassica spp
- b) Cucurbits
- c) Nymphaea
- d) None of these

10. Botanical name of poppy is

- a) Cucumis sativus
- b) Lawsonia inermis
- c) Brassica nigrum
- d) Papaver somnifera

OR

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SUBJECT CODE NO: B-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination March/April 2018
Elective Paper
Botany Paper- XVI
B Plant Breeding and Seed Technology

[Time: 1:30 Hours]

[Max.Marks: 50]

N.B Please check whether you have got the right question paper.
1) Attempt all questions.
2) Illustrate your answer with suitable diagram wherever necessary.

Q.1 What is hybridization? Describe hybridization procedure in cross pollinated crops. 20

OR

Write in brief:

- a) Clonal selection
- b) Male sterility and its advantage

Q.2 Describe hybridization procedure and programme in cotton. 20

OR

Write short notes on any four

- a) Analysis of variance (ANOVA)
- b) Emasculation (c) Heterosis
- c) Seed processing (e) seed dormancy
- d) Foundation seed

Q.3 Multiple choice question. 10

1. Pure line is a variety with following genotype
 - a) Heterozygous
 - b) Homozygous
 - c) Mix genotype
 - d) All of the above

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2. Crossing between two different species
 - a) Intergeneric
 - b) Interspecific
 - c) Intraspecific
 - d) Introgressive
3. Mutation is
 - a) Sudden change
 - b) Heritable change
 - c) Not heritable change
 - d) All of the above
4. In cross pollinated crops the plants are
 - a) Homozygous
 - b) Heterozygous
 - c) Homozygous and Heterozygous
 - d) All of the above
5. Bulk method of selection is followed in
 - a) Cross – pollinated
 - b) Often self-pollinated
 - c) Self-pollinated
 - d) Open pollinated
6. Inbreeding depression is observed in
 - a) Cross pollinated
 - b) Self-pollinated
 - c) Often cross pollinated
 - d) Often self-pollinated
7. In genetic male sterility plants are
 - a) 100% male sterile
 - b) 50% male fertile and 50% male sterile
 - c) 100% Fertile
 - d) All of the above
8. Protogyny is floral condition in which
 - a) Male organ mature first
 - b) Female organ mature first
 - c) Synchronize maturity
 - d) All of the above

9. In double cross are involve
- a) Two in bred
 - b) Three in bred
 - c) Multiple in bred
 - d) Four in bred
10. Seed germination is a test for
- a) Seed dormancy
 - b) Seed viability
 - c) Seed purity
 - d) Genetic purity

OR

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SUBJECT CODE NO:- B-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination March/April 2018
Elective Paper
Botany Paper- XVI
C Plant Pathology

[Time: 1:30 Hours]

[Max.Marks: 50]

- N.B Please check whether you have got the right question paper.
1) Attempt all questions.
2) Draw neat and well labelled diagrams wherever necessary.
- Q.1 Define plant disease? Give an account on in animate causes of diseases. 20
OR
Explain in brief history of plant pathology. Add a note on losses due to pathogens.
- Q.2 Describe in detail symptoms, causal organism, disease cycle and Management of downy mildew of grapes. 20
OR
Write short notes on (any four)
- a) Necrosis and smut symptoms
 - b) Uredial stage of puccinia
 - c) Cercospora on Albizzia Fruits
 - d) Grain smut of Jowar
 - e) Wilt of Tur
 - f) Rust of Euphorbia
- Q.3 Multiple choice questions 10
1. Abnormal increase in size of an organ or of entire plant is known as _____
- a) Hyper plasia
 - b) Hypertrophy
 - c) Hypoplasia
 - d) Hypotrophy

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2. Reduced development of chlorophyll result into _____
 - a) Necrosis
 - b) Shoot hole
 - c) Leaf blight
 - d) Chlorosis

3. IARI is presently located at _____.
 - a) Hyderabad
 - b) Kolkata
 - c) New Delhi
 - d) Mumbai

4. Black stem rust of Wheat caused by _____.
 - a) Puccinia
 - b) Claviceps
 - c) Ustilago
 - d) Mucor

5. Yellow vein mosaic of bean caused by _____.
 - a) Bacteria
 - b) Fungi
 - c) Mycoplasma
 - d) Virus

6. Grassy shoot of sugarcane caused by _____.
 - a) Bacteria
 - b) Mycoplasma
 - c) Algae
 - d) Fungi

7. Powdery mildew of rose is caused by _____.
 - a) Erwinia
 - b) Fusarium
 - c) Erysiphae
 - d) Pythium

8. Ergot containing _____.
 - a) Xylol
 - b) Cellulose
 - c) Lignin
 - d) Ergotin

9. Citrus canker is caused by _____

- a) Rhizobium
- b) Neurospora
- c) Nitrosomonas
- d) Xanthomonas

10. Globose, elongated or irregular sized outgrowth formed on attacked part symptom known as

- a) Galls and tumours
- b) Scab
- c) Die back
- d) Smut

OR

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SUBJECT CODE NO:- B-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination March/April 2018
Elective Paper
Botany Paper- XVI
D Bio-Technology

[Time: 1:30 Hours]

[Max.Marks: 50]

N.B Please check whether you have got the right question paper.
1) Attempt all questions.
2) Draw neat and well labelled diagram wherever necessary.

Q.1 Explain Biotechnology in India and add a note on DNA finger printing. 20

OR

Describe structure and replication of DNA.

Q.2 Explain application of tissue culture and add a note on totipotency. 20

OR

Write short notes on (any four) of the following

- a) Renature of DNA
- b) Gene mapping
- c) Gene deliveries
- d) Protoplast culture
- e) Organogenesis
- f) Human genome project

Q.3 Multiple choice questions. 10

1. The DNA with right handed coiling is called _____
 - a) α DNA
 - b) β DNA
 - c) Circular DNA
 - d) B DNA

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2. The core promoter has a special DNA sequence called _____ box.
 - a) BATA Box
 - b) TATA Box
 - c) BETA Box
 - d) VATA Box
3. Z – DNA is _____ bases per tern.
 - a) 10
 - b) 12
 - c) 14
 - d) 20
4. One of the most useful method for identifying a specific gene is the _____.
 - a) Southern blot
 - b) Westerns blot
 - c) Northern blot
 - d) None of these
5. Electrophoresis is used to match gene with its function _____.
 - a) Clone genes
 - b) Separate fragments of DNA
 - c) Cut DNA into fragment
 - d) None of theses
6. Polymerase chain reaction is concerned with _____.
 - a) DNA replication
 - b) DNA repairing
 - c) DNA proof reading
 - d) DNA amplification
7. Transgenic plants are _____.
 - a) Genes are present transposition
 - b) Plants having on gene
 - c) Plants into which genes of another organism have been in planted
 - d) Genes imperfect
8. First Gm plant was _____.
 - a) Tomato
 - b) Tobacco
 - c) Cottan
 - d) Rice

9. A good vector has at least _____ marker gene.

- a) Two
- b) Three
- c) Four
- d) Five

10. Replication is the copying of _____

- a) DNA
- b) t RNA
- c) m RNA
- d) r RNA

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SUBJECT CODE NO:- B-2161
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination March/April 2018
Botany Paper-I
Diversity of Cryptogams-I

[Time: 1:30 Hours]

[Max.Marks: 50]

Please check whether you have got the right question paper.

- N.B 1. Attempt all questions.
2. Illustrate your answer with suitable labeled diagram.
- Q.1 Explain in detail ultra-structure and reproduction in Bacteria. 20
OR
Explain in detail systematic position, thallus structure and reproduction of Sargassum. 20
- Q.2 Describe systematic position, structure of Mycelium and reproduction of Eurotium. 20
OR
Write short note on: (any four) 20
a) Classification of bacteria
b) General characters of cryptogams
c) Thallus structure of Nostoc
d) Globule of Chara
e) Tikka disease
f) T.S of Gills of Agaricus
- Q.3 Multiple choice questions: 10
1) Bacteria have all membrane made up of -----.
a) Proteins & lipids
b) Cellulose
c) Fats
d) Chitin
2) Bacteria which are smallest in size are -----.
a) Vibrio
b) Cocci
c) Spirilla
d) Bascilli
3) Double stranded RNA viruses are known as -----.
a) Riboviruses
b) Reoviruses
c) Ribovira
d) Arboviruses

- 4) In bacteria -----
 - a) DNA is enclosed in nucleus
 - b) DNA is four in number in nucleus
 - c) DNA is double stranded & circular
 - d) DNA is scattered

- 5) Algae are -----
 - a) Chlorophyllous cryptogams
 - b) Non chlorophyllous cryptogams
 - c) Chlorophyllous phanerogams
 - d) Non-chlorophyllous phanerogams

- 6) Sexual reproduction is absent in -----
 - a) Sargassum
 - b) Nostoc
 - c) Chara
 - d) Botrydium

- 7) Xanthophyta are commonly known as -----
 - a) Green algae
 - b) Brown algae
 - c) Yellow -green algae
 - d) None of the above

- 8) Completely closed ascocarp is known as -----
 - a) Apothecium
 - b) Cleistothecium
 - c) Perithecium
 - d) Hydothecium

- 9) Torulla is found in -----
 - a) Mucor
 - b) Ascogenous hypha
 - c) Ascogonium
 - d) Yeast

- 10) Commercial source of manufacture of citric acid is -----
 - a) Citrus fruit
 - b) Bacteria
 - c) Eurotium
 - d) Penicillium

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SUBJECT CODE NO:- B-2162
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination March/April 2018
Botany Paper-II
Morphology of Angiosperms

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N.B

1. Attempt all questions.
2. Illustrate your answer with suitable labeled diagram.

Q.1 Describe type of leaf and add a note on various types of Phyllotaxy? 20

OR

Describe the modification of root. 20

Q.2 What is in florescence? Describe various type of in florescence. 20

OR

Write short note on: (any four) 20

- a) Leaf Tendril
- b) Rhizome
- c) Capsule fruit
- d) Valvate and imbricate aestivation
- e) Cohesion of stamens
- f) Drupe and Berry fruit

Q.3 Multiple choice questions: 10

- 1) The fibrous root are commonly found in -----.
 - a) Dicotyledons
 - b) Monocotyledons
 - c) Gymnosperms
 - d) None of these
- 2) ----- is the edible stem from the following.
 - a) Potato
 - b) Sweet potato
 - c) Turmeric
 - d) Bitter Gourd
- 3) Arrangement of leaves on nodal part of the stem is called as -----.
 - a) Venation
 - b) Phyllotaxy
 - c) Aestivation
 - d) Placentation

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- 4) When in unipinnate leaf, the leaflet's are odd in number, the leaf is said to be -----.
- Paripinnate
 - Imparipinnate
 - Bipinnate
 - None of these
- 5) The Rhizome is the modification of -----.
- Root
 - Stem
 - Leaf
 - Flower
- 6) In ----- inflorescence, the main axis ends in a flower and similarly the lateral axis also ends in a flower.
- Recemose
 - Cymose
 - Both of these
 - None of these
- 7) Internode between androecium and gynoecium is known as -----.
- Androphore
 - Gynandrophore
 - Gynophore
 - All of these
- 8) The flower with inferior ovary is called as -----.
- Hypogynous
 - Perigynous
 - Epigynous
 - None of these
- 9) In Bicarpellary apocarpus condition the carpels are -----.
- Two and united
 - Two and free
 - Many and united
 - Three and free
- 10) The fruit of tomato is -----.
- Drupe
 - Berry
 - Pepo
 - Nut

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SUBJECT CODE NO:- B-2167
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-III) Examination March/April 2018
Botany Paper-VII
Taxonomy of Angiosperms

[Time: 1:30 Hours]

[Max. Marks: 50]

N.B Please check whether you have got the right question paper.

- N.B
1. Attempt all questions.
 2. Draw neat and well labeled diagrams wherever necessary.

Q.1 Explain in detail process of making herbarium and add a note on digital herbaria. 20

OR

Explain concept of binomial nomenclature with its advantages. 20

Q.2 Explain in detail family Malvaceae with its systematic position and economic importance. 20

OR

Write short notes: (any four) 20

- a) Floral structure of Fabaceae
- b) Economic importance of Solanaceae
- c) Legume fruit
- d) Economic important of Apocynaceae
- e) Floral structure of Nyctaginaceae

Q.3 Multiple choice questions: 10

- 1) Full form of ICBN is -----.
 - a) Indian Congress of Biological Names
 - b) International Code of Botanical Nomenclature
 - c) International Congress of Biological Names
 - d) Indian Code of Biological Nomenclature
- 2) Leaves of Annonaceae are -----.
 - a) Compound
 - b) Radical
 - c) Simple
 - d) None of these
- 3) Oryza Sativa is botanical name of -----.
 - a) Wheat
 - b) Maize
 - c) Rice
 - d) Jowar

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- 4) Family caesalpinaceae is characterized by ----- flower.
 - a) Pentamerous
 - b) Trimerous
 - c) Tetramerous
 - d) All of these

- 5) Bilabiate corolla is feature of -----.
 - a) Solanaceae
 - b) Asteraceae
 - c) Annonaceae
 - d) Lamiaceae

- 6) Indefinite number of stamens and carpels is distinguishing feature of -----.
 - a) Liliaceae
 - b) Annonaceae
 - c) Solanaceae
 - d) Malvaceae

- 7) Acanthaceae flowers have -----.
 - a) Infundibuli form corolla
 - b) Personate corolla
 - c) Polyadelphous stamens
 - d) Trimerous symmetry

- 8) Which of the following features are found in plants of family Liliaceae?
 - a) Trimerous flower & Parallel venation
 - b) Trimerous flower & Reticulate venation
 - c) Pentamerous flower & Parallel venation
 - d) Pentamerous flower & Reticulate venation

- 9) Which of the following family is included under order gentianales?
 - a) Liliaceae
 - b) Fabaceae
 - c) Acanthaceae
 - d) Apocynaceae

- 10) Bentham and Hooker's system of classification is -----.
 - a) Natural
 - b) Artificial
 - c) Phyllogenetic
 - d) All of these

Total No. of Printed Pages:2

SUBJECT CODE NO:- B-2168
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-III) Examination March/April 2018
Botany Paper-VIII
Plant Ecology

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N.B

1. Attempt all questions.
2. Draw neat and well labeled diagrams wherever necessary.

Q.1 What is ecosystem? Explain its biotic and abiotic components. 20

OR

Write in detail physicochemical properties of water. 20

Q.2 Explain in detail vegetation types of India. 20

OR

Write short notes on: (any four) 20

- a) Phosphorous cycle
- b) Biological spectrum
- c) Anatomical adaptations in halophytes
- d) Epiphytes
- e) Soil types of India
- f) Temperature as ecological factor

Q.3 Multiple choice questions: 10

- 1) Wavelength of visible spectrum lies between -----.
 - a) 10 to 100 $m\mu$
 - b) 100 to 380 $m\mu$
 - c) 390 to 700 $m\mu$
 - d) 700 to 900 $m\mu$
- 2) Acidic soil has -----.
 - a) More than 7 pH
 - b) 7 pH
 - c) Less than 7 pH
 - d) None of these
- 3) Which of the following is rooted hydrophyte?
 - a) Nymphaea
 - b) Wolfia
 - c) Pistia
 - d) Eichhornia

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- 4) Rolling of leaves is ----- character of xerophyte
- Physiological
 - Morphological
 - Anatomical
 - None of these
- 5) Typha latifolia is ----- hydrophyte
- Amphibious
 - Free floating
 - Submerged floating
 - All of these
- 6) Mangrove vegetation is characteristic of ----- region.
- Western Himalaya
 - Eastern Himalaya
 - Gangetic plain
 - None of these
- 7) Rhizobium is a part of -----.
- Cell cycle
 - Nitrogen cycle
 - Phosphorus cycle
 - Carbon cycle
- 8) Producers in ecosystem are -----.
- Heterotrophs
 - Autotrophs
 - Parasites
 - All of these
- 9) Which of the following ecological pyramid is always upright?
- Pyramid of Number
 - Pyramid of Biomass
 - Pyramid of Energy
 - All types of Pyramids
- 10) Epiphytes show velamen tissue, which absorb -----.
- Water from soil
 - Nitrogen from air
 - Nitrogen from soil
 - Moisture from atmosphere