

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2145
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XIX (Genetics and Biotechnology)

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B
- i. Attempt all questions.
 - ii. Draw neat and well – labeled diagrams wherever necessary.

Q.1 What is gene interaction? Explain in details co – dominance and complementary gene with suitable examples. 20

OR

Define sex linked inheritance. Explain colorblindness and hemophilia in man. 20

Q.2 What are restriction endonucleases? Explain in details their properties and uses. 20

OR

Write short notes on any four the following. 20

- a) Sex determination in Melandrium.
- b) Law of segregation.
- c) Genetic counseling
- d) Phenylketonuria
- e) Plasmids.
- f) Application of genetic engineering.

Q.3 Multiple choice questions. 10

1) In grasshopper the sex chromosome complement is-----.

- a) XX – XY
- b) XX – XO
- c) ZZ –ZW
- d) XX – AA

2) A cross between f_1 individuals with only a recessive parent is called a -----.

- a) Back cross
- b) Test cross
- c) Dominant cross
- d) Dihybrid cross

3) Hypertrichosis is expressed in -----.

- a) Males
- b) Females
- c) Both males and females
- d) None of these

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- 4) When a single character is controlled by two or more pairs of alleles independently the gene are called ----- gene.
 - a) Dominant
 - b) Recessive
 - c) Duplicate
 - d) Triplicate

- 5) One gene one character hypothesis postulated by -----.
 - a) Mendel
 - b) Morgan
 - c) Devries
 - d) Bridges

- 6) The portion of DNA specifying a single polypeptide chain is termed as -----.
 - a) Muton
 - b) Recon
 - c) Cistron
 - d) None of these

- 7) Y linked gene is also called as -----.
 - a) Dominant gene
 - b) Lethal gene
 - c) Holandric gene
 - d) Recessive gene

- 8) Restriction enzymes are called as -----.
 - a) Biological scissors
 - b) Molecular scalpels.
 - c) Molecular knives
 - d) All of these

- 9) Introduction of foreign gene for improving genotype is -----.
 - a) Tissue culture
 - b) Bioengineering
 - c) Genetic engineering
 - d) None of these

- 10) The recombinant DNA technology cannot be used for -----.
 - a) Developing genomic libraries
 - b) Gene cloning
 - c) Sexual reproduction
 - d) None of these

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2017

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SUBJECT CODE NO: N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XX (A) Diversity of Angiosperms -II

[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 whenever necessary.

Q.1 Define binomial nomenclature. Add a note on its principle and rules. 20

OR

Explain in detail modern trends in taxonomy. Add a note on Cytotaxonomy and chemotaxonomy.

Q.2 Describe in detail family Liliaceae up to floral formula and floral diagram along with two plants of economic importance. 20

OR

Write short notes on (any four)

- a) Herbaria
- b) Botanic garden
- c) Floral characters of Euphorbiaceae
- d) Advance characters in Orchid flower
- e) Economic importance of oleaceae
- f) Merits of Takhtajan system

Q.3 Multiple choice questions. 10

- 1) Binomial nomenclature first used by
 - a) Hutchinson
 - b) Gaspard Bauhin
 - c) Armen Takhajan
 - d) Adolf Engler
- 2) Botanic garden of NBRI is located at
 - a) Mumbai
 - b) Bhopal
 - c) Lucknow
 - d) Chennai
- 3) Who is associated with Uppsala University
 - a) Theophrastus
 - b) Caesalpinno
 - c) Bentham
 - d) Linnaeus

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- 4) Families of flowering plants 1959 is the publication of
 - a) John Hutchinson
 - b) Charles Darwin
 - c) Carlous Linnaeus
 - d) Armen Takhtajan

- 5) Primitive group of Takhajan system of classification is
 - a) Myrtilles
 - b) Liliales
 - c) Magnoliales
 - d) Pandanales

- 6) Advanced group of Engler and Prandtl system of classification is
 - a) Cucurbitales
 - b) Ranales
 - c) Rhamnales
 - d) Geraniales

- 7) Genus chenopodium belongs to family
 - a) Olcaceae
 - b) Amaranthaceae
 - c) Scrophulariaceae
 - d) None of these

- 8) Botanical name of 'Shatawari' is
 - a) Withania somnifera
 - b) Aloe vera
 - c) Gloriosa superba
 - d) Asparagus racemosus

- 9) The flower of commelinaceae is
 - a) Dimerous
 - b) Trimerons
 - c) Tetramerous
 - d) Pentamerous

- 10) Zygomorphic condition of flower is the common character of family ----
 - a) Olcaceae
 - b) Commelinaceae
 - c) Liliaceae
 - d) Orchidaceae

Total No. of Printed Pages:2

SUBJECT CODE NO:N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
(B) Economic Botany

[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 whenever necessary.
- Q.1 Describe origin morphology. Cultivation harvesting and uses of Maize. 20
- OR**
- Write in brief
- a) Morphology, cultivation and uses of soya bean
 - b) Morphology cultivation and uses of Blackgram
- Q.2 Describe morphology cultivation harvesting processing and uses of Jute. 20
- OR**
- Write short notes on any four of the following.
- a) Cultivation and uses of coffee
 - b) Morphology and uses of Brinjal
 - c) Processing of cotton
 - d) Cultivation and harvesting of Mango
 - e) Cultivation and harvesting of potato
 - f) Morphology and uses of orange
- Q.3 Multiple choice question. 10
- 1) Pulses belongs to family -----
 - a) Malvaceae
 - b) Rutaceae
 - c) Poaceae
 - d) Fabaceae
 - 2) Spices are mainly grown in -----
 - a) Punjab
 - b) Kerala
 - c) Odisha
 - d) Telngana
 - 3) Cotton fibre is rich in -----
 - a) Hemicellulose
 - b) Lignin
 - c) Cellulose
 - d) Protein

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- 4) Onion crop is -----
 - a) Perennial
 - b) Annual
 - c) Seasonal
 - d) Biennial

- 5) Scientific name of Maize is ----
 - a) Oryza sativa
 - b) Sorghum vulgare
 - c) Zea mays
 - d) Avena sativa

- 6) Black pepper fruit is a -----
 - a) Achene
 - b) Drupe
 - c) Pod
 - d) Aggregate

- 7) Banana plant is propagated by
 - a) Stem cutting
 - b) Stolon
 - c) Seed
 - d) Rhizome

- 8) Which grains are staple food for human beings
 - a) Oil seed
 - b) Millets
 - c) Pulses
 - d) Cereals

- 9) Soybean oil is -----
 - a) Nondrying oil
 - b) Semi – drying oil
 - c) Essential oil
 - d) Drying oil

- 10) Orchids are distributed in which region of India
 - a) Southern
 - b) Eastern
 - c) Northern
 - d) Western

Total No. of Printed Pages:2

SUBJECT CODE NO:N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XX (C) Microbiology and Disease Management

[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 whenever necessary.
- Q.1 Define Microscopy. Describe in detail principle and working of compound microscope and electron microscope. 20
- OR**
- Describe in detail Industrial application of Microorganisms in Milk production and Antibiotics.
- Q.2 Describe in detail the preventive methods of plant – disease management 20
- OR**
- Write short – notes on (any four)
- a) Plant clinic
 - b) Field sanitation
 - c) Pneumatic Air pump
 - d) B .T. cotton
 - e) Aureofungin
 - f) Captan
- Q.3 Multiple choice questions. 10
- 1) ---- has firstly discovered the crude microscope.
 - a) Leeuwenhoek
 - b) Mendel
 - c) Koch
 - d) Darwin
 - 2) ---- is used in preparation of Bacterial slide.
 - a) Cotton blue
 - b) Gram's stain
 - c) Light green
 - d) Acetocarmine
 - 3) The instrument used for dry sterilization method is -----
 - a) Autoclave
 - b) Pressure cookers
 - c) Oven

- d) Incubator
- 4) ---- is used as mostly a Biopesticide
- a) Copper sulphate
 - b) Neem
 - c) Baristin
 - d) Zinc phosphate
- 5) Burning of infected plant residue is the best method at -----
- a) Sanitation
 - b) Sterilization
 - c) Crop rotation
 - d) Hyper parasitism
- 6) ---- Techniques used to protect seed borne fungal diseases.
- a) Seed germination
 - b) Seed treatment
 - c) Seed packing
 - d) Seed certification
- 7) The chemical ---- is commonly used for the purpose of soil sterilization
- a) Formaldehyde
 - b) Captan
 - c) 2, 4- D
 - d) Copper sulphate
- 8) The example of sulphur fungicide is -----
- a) Nemagon
 - b) Dexon
 - c) Thiram
 - d) Aureofungin
- 9) ----- is the systemic fungicide
- a) Agrason
 - b) Streptomycin
 - c) Baristin
 - d) Copper sulphate
- 10) ---- is a genetically modified organism
- a) MLO
 - b) PPLO
 - c) TMV
 - d) GMO

Total No. of Printed Pages:2

SUBJECT CODE NO:N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XX (D) Bioinformatics

[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 labeled diagrams whenever necessary.

Q.1 What is mean by data presentations? Explain bar chart and histogram in data presentation. 20

OR

Explain in detail mean and standard deviation by giving suitable example

Q.2 Explain types of computer and add a note on storage devices. 20

OR

Write a short note on (any four) of the following

- a) Sampling techniques
- b) Output devices
- c) Chi – square test
- d) Linux
- e) WAN
- f) PUBMD

Q.3 Multiple choice questions. 10

- 1) The term biometry was coined by -----
 - a) Fischer
 - b) Francis Galton
 - c) Kara Pearson
 - d) Walter Weldon
- 2) Circle divide into sectors proportional to frequency of items shown is called -----
 - a) Bar chart
 - b) Pie chart
 - c) Histogram
 - d) Polygon
- 3) Which of following is not a measure of central location
 - a) Mean
 - b) median
 - c) Variation
 - d) Mode

2017

- 4) The operating system manages -----
 - a) Memory
 - b) Processor
 - c) Disk & I/C devices
 - d) All of above

- 5) C P U has a number of ----- register
 - a) Store
 - b) Hidden
 - c) Switch
 - d) Address

- 6) Processed data is called as -----
 - a) Data
 - b) Data item
 - c) Information
 - d) None of above

- 7) The student test is -----
 - a) A test for comparing average
 - b) Test for variance
 - c) Non parametric test
 - d) None of above

- 8) Primary memory is also called as -----
 - a) Semi conductor
 - b) Magnetic memory
 - c) Optical memory
 - d) None of these

- 9) Line diagram in the form of ---- line
 - a) Rectangle
 - b) Vertical
 - c) Pie
 - d) Bar

- 10) Most frequency occurring value of data set is called a -----
 - a) Mean
 - b) Mode
 - c) Median
 - d) File

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2161
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-II) Examination Nov/Dec 2017
Botany Paper- IV Diversity of Cryptogams-II

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B
- i. Attempt all questions.
 - ii. Illustrate your answer with suitable labeled diagrams.

Q.1 Give an account of external and internal morphology of Marchantia. 20

OR

Give an account of sporophyte of Funaria. 20

Q.2 Give an account of the Vegetative structure of the sporophyte of Lycopodium. 20

OR

Write short notes on (any four) 20

- A. Classification of Bryophytes as per G.M. Smith.
- B. Vegetative reproduction in Funaria.
- C. Sporangium of Equisetum
- D. Selaginella cone
- E. Heterospory in pteridophytes.
- F. Alternation of generation in psilotum.

Q.3 Multiple choice questions. 10

1. In bryophytes embryonic development of the zygote takes place in the-----.
 - a. Capsule
 - b. Archegonium
 - c. Anthridium
 - d. Sporangium
2. These groups of plants are known as plant amphibians -----.
 - a. Fungi
 - b. Algae
 - c. Bryophytes
 - d. Pteridophytes
3. Scales bearing bryophytes is -----.
 - a. Anthoceros
 - b. Polytricum
 - c. Funaria
 - d. Marchantia

4. Spirally arranged sessile leaves are present in -----.
 - a. Funaria
 - b. Marchantia
 - c. Equisetum
 - d. Lycopodium

5. In bryophytes spores are -----.
 - a. Non – flagellate
 - b. Multiflagellate
 - c. Biflagellate
 - d. None of these

6. In equisetum stem vascular canals are present -----.
 - a. Below the ridges
 - b. Below the grooves
 - c. Between ridges and grooves
 - d. Inner to the endodermis

7. The earth's first forests were formed belonged to-----.
 - a. Psilopsida
 - b. Lycopsidea
 - c. Pteropsida
 - d. Sphenopsida

8. ----- plant is commonly known as water fern.
 - a. Marsilea
 - b. Selaginella
 - c. Lycopodium
 - d. Psilotum

9. Ligulate laves are found in -----.
 - a. Lycopodium
 - b. Selaginella
 - c. Equisetum
 - d. Marsilea.

10. Endophytic mycorrhiza is a feature of rhizome of -----.
 - a. Marsilea
 - b. Equisetum
 - c. Psilotum
 - d. Lycopodium

SUBJECT CODE NO: N-2162
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-II) Examination Nov/Dec 2017
Botany Paper-V
Histology, Anatomy and Embryology

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions.
- ii) Draw neat and well – labeled diagrams wherever necessary.

Q.1 Explain in detail the complex permanent tissues. 20

OR

Describe in detail the secondary growth in dicot roots.

Q.2 Describe various agents, types and subtypes of pollination mechanisms and add a note on entomophily. 20

OR

Write short notes on: (Any 4)

- a) Position – wise types of meristems
- b) Structure and functions of phloem
- c) Growth rings
- d) Primary structure of monocot roots
- e) Helobial and nuclear endosperm
- f) Anemophily

Q.3 **Multiple choice questions :** 10

- 1) ----- tissue is exclusively absent in roots.
 - a) Parenchyma
 - b) Collenchyma
 - c) Sclerenchyma
 - d) Phloem
- 2) Aquatic plants can float in water due to the presence of -----
 - a) Chlorenchyma
 - b) Aerenchyma
 - c) Xylem
 - d) Stomata
- 3) Angiosperms are characterized by the exclusive presence of -----
 - a) Tracheids
 - b) Parenchyma
 - c) Schlerenchyma
 - d) Vessels

4) Schlerenchyma is a dead mechanical tissue because of the presence of -----

- a) Cytoplasm
- b) Vacuoles
- c) Cell wall
- d) Lignin

5) In dicot stems, pericycle is situated -----

- a) Above the epidermis
- b) Below cortex
- c) Above endodermis
- d) Below endodermis

6) Protoderm differentiates into -----

- a) Cortex
- b) Epidermis
- c) Pericycle
- d) Periblem

7) Conjoint, collateral & open vascular bundles are found in -----

- a) Dicots
- b) Ferns
- c) Monocots
- d) Mosses

8) Double fertilization is found in -----

- a) Gymnosperms
- b) Pteridophytes
- c) Monocots
- d) Angiosperms

9) In angiosperms, endosperm is -----

- a) Triploid
- b) Diploid
- c) Haploid
- d) None of the above

10) In porogamy, pollen tube enter ovule through -----

- a) Micropyle
- b) Chalaza
- c) Integuments
- d) Funiculus

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2168
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-IV) Examination Nov/Dec 2017
Botany Paper- XII
Plant Physiology

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Illustrate your answers with suitable well labeled diagram.
- Q.1 Explain active and passive absorption of water in plants. 20
- OR**
- What are plant growth regulators? Discuss the role and practical applications of auxins.
- Q.2 Explain in detail the C₄ pathway of photosynthesis. 20
- OR**
- Write short notes of any four :-
- a) Plasmolysis
 - b) Types of transpiration
 - c) Properties of enzymes
 - d) Sigmoid growth curve
 - e) Ultrastructure of mitochondria
 - f) Fermentation
- Q.3 Multiple choice questions:- 10
1. Solution having equal concentration as that of cell sap is called –
 - a) Hypotonic solution
 - b) Isotonic solution
 - c) Hypertonic solution
 - d) Neutral solution
 2. Semipermeable membrane allows the diffusion of –
 - a) Solute
 - b) Solvent
 - c) Both a & b
 - d) None of above
 3. The water available for plants for absorption from soil is –
 - a) Gravitational water
 - b) Hygroscopic water
 - c) Capillary water
 - d) Chemically bound water

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4. Kidney shaped guard cells are present in –
 - a) Dicot plants
 - b) Monocot plants
 - c) Both a & b
 - d) Algae

5. Co –enzyme is chemically a –
 - a) Protein
 - b) Vitamin
 - c) Fat
 - d) Carbohydrate

6. Coconut milk is rich in
 - a) Auxins
 - b) Gibberellins
 - c) Cytokinins
 - d) Ethylene

7. Parthenocarpy is induced by the application of –
 - a) Gibberellins
 - b) Auxins
 - c) Cytokinins
 - d) Ethylene

8. First stable compound in HSK cycle is –
 - a) Malic acid
 - b) Oxalic acid
 - c) Aspartic acid
 - d) Pyruvic acid

9. Incomplete oxidation of glucose into P.A. with several intermediate steps is –
 - a) T.C.A pathway
 - b) Glycolysis
 - c) E.T.S
 - d) None of above

10. Terminal cytochrome of respiratory chain which donate electron to oxygen is –
 - a) Cytochrome b
 - b) Cytochrome a₁
 - c) Cytochrome c
 - d) Cytochrome a₃

Total No. of Printed Pages:02

SUBJECT CODE NO:- N-2009
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
Botany Paper- XV- (Cell Biology & Molecular Biology)

[Time: 1:30 Hours]

[Max. Marks: 50]

N.B Please check whether you have got the right question paper.
i) Attempt all question.
ii) Draw neat and well-labeled diagram whenever necessary.

- Q.1 Describe structure and functions of Golgi complex. 20
OR
Write in details Replication of DNA 20
- Q.2 What is chromosomal aberrations? Explain deletion and duplication. 20
OR
Write short note on (Any four) 20
a) Eukaryotic cell
b) Endoplasmic reticulum
c) Prophase-I
d) t-RNA
e) Euchromatin
f) Trisomy
- Q.3 Multiple choice questions 10
1) Cell theory was proposed by _____
a) Robert Hooke
b) Leeuwenhoek
c) Schleiden and schwann
d) Messelson and Stahl
- 2) Cell wall is _____
a) Permeable
b) Semipermeable
c) Selectively permeable
d) Impermeable
- 3) Cell membrane is made up _____
a) Pectin
b) Cellulose
c) Proteins and Lipids
d) Chitin and lignin

- 4) _____ is involved in protein synthesis
- a) Golgi complex
 - b) Lysosome
 - c) Vacuole
 - d) Ribosome
- 5) _____ is called reductional cell division.
- a) Meiosis
 - b) Mitosis
 - c) Amitosis
 - d) All above
- 6) Centromeres are arranged on equatorial plate during _____
- a) Telophase
 - b) Anaphase
 - c) Metaphase
 - d) Prophase
- 7) Left handed coiling of DNA occurs in _____
- a) C- DNA
 - b) Z- DNA
 - c) b- DNA
 - d) A- DNA
- 8) Centromere occur in the middle of the chromosome in _____
- a) Telocentric
 - b) Acrocentric
 - c) Sub metacentric
 - d) Metacentric
- 9) Balbiani ring is present in _____
- a) Polytene chromosome
 - b) Lampbrush chromosome
 - c) Supernumary chromosome
 - d) All the above
- 10) Secondary constriction is also called as _____
- a) Satellite
 - b) Telomer
 - c) Nucleolar organizer
 - d) Centromere

Total No. of Printed Pages:02

SUBJECT CODE NO: N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
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.
i) Attempt all questions.
ii) Draw neat and well labeled diagrams

Q.1 Write an essay on Biodiversity 20
OR
Comment on Endemism and Hot spot.

Q.2 Describe in detail family cucurbitaceae up to floral formula and floral diagram. 20
OR

Write short note on (any four)

- a) In-situ conservation
- b) Threatened categories
- c) Merits and demerits of Bentham & Hooker's system
- d) Floral character of family Brassicaceae
- e) Diagnostic characters of family Apiaceae
- f) Artificial system of classification.

Q.3 Multiple choice questions: 10

- 1 Ex-situ conservation includes
 - a) National Park
 - b) Botanical garden
 - c) Sanctuary
 - d) None of these
- 2 Different rice varieties is the example of following diversity type
 - a) Genetic diversity
 - b) Species diversity
 - c) Ecological diversity
 - d) None of these
- 3 Sanjay Gandhi National Park is located in _____ state.
 - a) Gujarat
 - b) Madhya Pradesh
 - c) Maharashtra
 - d) Kerala

- 4 Largest number of plant diversity distributed in _____ country.
- India
 - China
 - Nepal
 - Brazil
- 5 Genus *Nelumbo* belongs to family
- Capparidaceae
 - Rhamnaceae
 - Lythraceae
 - Nymphaeaceae
- 6 Hesperidium fruit found in the family
- Rutaceae
 - Capparidaceae
 - Brassicaceae
 - Apiaceae
- 7 *Terminalia bellirica* belongs to the family
- Apiaceae
 - Combretaceae
 - Papaveraceae
 - Brassicaceae
- 8 Parietal placentation is common in the family
- Rutaceae
 - Nymphaeaceae
 - Rhamnaceae
 - None of these
- 9 A.P. de Candolle system is based upon _____ system
- de Jussieu
 - Caspar Bauhin
 - Hutchinson
 - None of these
- 10 *Argemone mexicana* belongs to family
- Cucurbitaceae
 - Lythraceae
 - Magnoliaceae
 - Papaveraceae

Total No. of Printed Pages:02

SUBJECT CODE NO: N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
Elective Paper Botany Paper- XVI-(B) Plant Breeding and Seed Technology

[Time: 1:30 Hours]

[Max.Marks: 50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Illustrate your answer with suitable labeled diagram whenever necessary.

Q.1 Describe aims and objectives of plant breeding. 20

OR

Write in brief :

- a) Plant Introduction
- b) Randomized Block Design

Q.2 What is mutation? Describe role of mutation in crop improvement 20

OR

Write short notes on (any four)

- a) Pure line selection
- b) Latin square design
- c) Bulk method
- d) Non Endospermic seed
- e) Nucleus seed
- f) Seed Marketing

Q.3 Multiple choice question 10

- 1) The ancient method of crop improvement is
 - a) Introduction
 - b) Selection
 - c) Hybridization
 - d) Mutation
- 2) Self pollinated plant is also known as
 - a) Allogamous
 - b) Cliestogamous
 - c) Chasogamous
 - d) Autogamous
- 3) Clonal selection is practiced in
 - a) Cross pollinated
 - b) self pollinated
 - c) Vegetatively propagated
 - d) All of the above

- 4) Pedigree selection is followed in
 - a) Cross pollinated
 - b) Self pollinated
 - c) Often cross pollinated
 - d) None of the above

- 5) Intergeneric hybridization is a cross between
 - a) Same species
 - b) Different species
 - c) Different genes
 - d) Same genes

- 6) Anthesis phenomena is observed in
 - a) Gynoecium
 - b) Stamens
 - c) Anthers
 - d) Stigma

- 7) In three way cross following are involved
 - a) One Inbred
 - b) One single cross and Inbred
 - c) Two Inbred
 - d) Four Inbred

- 8) Protoandry is phenomena
 - a) Male organ mature first
 - b) Female organs mature first
 - c) Synchronized maturity
 - d) All of the above

- 9) Genetically most pure seed
 - a) Nucleus seed
 - b) Foundation seed
 - c) Certified seed
 - d) Register seed

- 10) Certified seed is progeny of
 - a) Breeder seed
 - b) Nucleus seed
 - c) Foundation seed
 - d) All of the above

Total No. of Printed Pages:02

SUBJECT CODE NO: N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
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.
i) Attempt all questions.
ii) Draw neat and well labeled diagrams whenever necessary

Q.1 Describe in detail concept and importance of seed pathology. Add a note on methods to study seed borne pathogens. 20

OR

Give an account on classification of plant diseases on the basis of causal organism

Q.2 Describe in detail symptoms, causal organism, disease cycle and management of Tikka disease of ground nut. 20

OR

Write short notes on (Any four)

- a) Koch's postulates
- b) Grassy shoot of sugarcane
- c) Yellow vein mosaic of bean
- d) Telial stage of puccinia
- e) Little leaf of brinjal
- f) Powdery mildew of rose

Q.3 Multiple choice questions 10

- 1) The father of Indian mycology is _____
 - a) K. C. Mehta
 - b) E. J. Butler
 - c) Mundukar
 - d) P. D. Sharma
- 2) Which of the following stage occurs on wheat of puccinia _____
 - a) Uredial
 - b) Basidial
 - c) Aecial
 - d) Pycnidial
- 3) Grain smut of jowar is caused by _____
 - a) Claviceps
 - b) Sphacelotheca
 - c) Puccinia
 - d) Alternaria

- 4) Damping off of mustard caused by _____
- a) Pythium
 - b) Rhizopus
 - c) Taphrina
 - d) Ustilago
- 5) IARI was established in _____
- a) 1919
 - b) 1917
 - c) 1921
 - d) 1905
- 6) Angular leaf spot of cotton is caused by _____
- a) Xanthomonas
 - b) Pseudomonas
 - c) Rhizobium
 - d) Azotobacter
- 7) The leaves are arched , puckered and distorted symptom is known as _____
- a) Leaf blight
 - b) Leaf spot
 - c) Leaf curl
 - d) Chlorosis
- 8) Secondary host of puccinia graminis tritici is _____
- a) Wheat
 - b) Rice
 - c) Beriberi
 - d) Maize
- 9) Late blight of potato is caused by _____
- a) Phytophthora
 - b) Trichoderma
 - c) Ustilago
 - d) Mucor
- 10) Black rot of onion is caused by _____
- a) Penicillium
 - b) Aspergillus
 - c) Fusarium
 - d) Rhizobium

Total No. of Printed Pages:02

SUBJECT CODE NO:-N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
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.
i) Attempt all questions.
ii) Draw neat and well labeled diagrams wherever necessary.

Q.1 Explain the roles of transgenic plants in agriculture. 20

OR

Q.2 Explain principles and procedure in r-DNA technology & add a note on DNA libraries. 20
Explain principles of tissue culture and add a note on Anther culture.

OR

Short note on (any four) of the following.

- a) Vectors
- b) DNA polymerase
- c) Meristem culture
- d) Organogenesis
- e) Plant genome project
- f) DST

Q.3 Multiple choice questions 10

- 1) Diameter of DNA helix is _____
 - a) 19 A⁰
 - b) 20 A⁰
 - c) 21 A⁰
 - d) 22 A⁰

- 2) DNA replication in prokaryotes is _____
 - a) Discontinuous
 - b) Continuous
 - c) Semi discontinuous
 - d) Conservative

- 3) The replication fork is _____ shaped
 - a) Alfa
 - b) Beta
 - c) Gamma
 - d) Theta

- 4) Plastids are also called _____
- a) Plastosome
 - b) Chromosomes
 - c) Hyposomes
 - d) Episomes
- 5) DNA finger printing method is very useful for _____
- a) Polymorphism
 - b) DNA test for identity & relationship
 - c) Forensic studies
 - d) All of these
- 6) Primary explanation technique was developed by
- a) Harrison
 - b) Crick
 - c) Karl
 - d) Niels
- 7) During 'gene cloning' which is called as gene taxi _____
- a) Protozoa
 - b) Bacterium
 - c) Plasmid
 - d) Vaccine
- 8) Which of the following is specifically used in genetic engineering
- a) Restriction endonuclease
 - b) Ligase
 - c) Gyrase
 - d) E.coli
- 9) Which one of the following is known as Opal
- a) UGA
 - b) GUG
 - c) UAA
 - d) UAG
- 10) Largest bacterial plasmid has _____ kilobases
- a) 5
 - b) 2000
 - c) 3000
 - d) 5000

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2025
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination Nov/Dec 2017
Botany Paper-I Diversity of Cryptogams-I

[Time: 1:30 Hours]

[Max. Marks:50]

N.B Please check whether you have got the right question paper.
i) Attempt all questions.
ii) Illustrate your answer with suitable labeled diagram.

Q.1 Explain in detail general characters, classification of viruses. Add a note on TMV. 20

OR

Explain in detail systematic position, Thallus structure and reproduction in Batrachospermum. 20

Q.2 Describe systematic position, structure of mycelium and reproduction in Albugo. 20

OR

Write short note on (any Four) 20

- a) Structure of Usnea
- b) General characters of Bacteria
- c) Botrydium thallus
- d) Economic importance of algae
- e) Mycelial structure of mucor
- f) Economic importance of fungi

Q.3 Multiple choice questions. 10

1. Asexual reproductive structure in bacteria is known as-----
 - a) Akinetes
 - b) Heterocyst
 - c) Endospore
 - d) Exospore

2. The bacteria that commonly lives in animal and human intestine is -----
 - a) Vibro cholerae
 - b) Bascillus anthracis
 - c) Coryne bacterium
 - d) Escherichia coli

3. TMV contains -----
 - a) RNA and proteins
 - b) DNA
 - c) Both DNA and RNA
 - d) DNA and proteins

4. Lichen shows -----
 - a) Symbiosis of Algae and fungi
 - b) Parasitic relation of algae &fungi
 - c) Mycorrhizae relationship
 - d) Commensalism

5. Female sex organ of chara is known as -----.
 - a) Nucule
 - b) Globule
 - c) Mucule
 - d) None of these

6. Father of modern algology of India is-----.
 - a) Bharadwaj
 - b) Desikacharya
 - c) M. O. P Iyengar
 - d) Fritsch

7. Aplanospores are -----.
 - a) Ciliated motile spores
 - b) Ciliated resting spores
 - c) Non – motile, Non ciliate resting spores
 - d) Ciliated and non – motile spores

8. Fungi lacking cross walls in the mycelium belong to -----.
 - a) Ascomycetes
 - b) Phycomycetes
 - c) Deuteromycetes
 - d) Basidiomycetes

9. The obligate parasitic fungi absorbs nourishment their the host cell through -----.
 - a) The surface
 - b) Appresoria
 - c) Rhizoids
 - d) Haustoria

10. Asci are formed in -----.
 - a) Ascobolus
 - b) Saccharomyces
 - c) Penicillium
 - d) All the above

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2026
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination Nov/Dec 2017
Botany Paper-II Morphology of Angiosperms

[Time: 1:30 Hours]

[Max. Marks: 50]

N.B Please check whether you have got the right question paper.
i) Attempt all questions.
ii) Illustrate your answer with suitable labeled diagram.

Q.1 Explain in details part of leaf and modification of leaf? 20

OR

Describe general character of stem and sub – aerial modification of stem. 20

Q.2 Define flower. Describe the part of typical flower and type of placentation. 20

OR

Write short note on (Any Four) 20

- a) Fusi form and Nipi form root
- b) Bulb and tuber
- c) Dispersal of seed and fruit by animals
- d) Verticillaster inflorescence
- e) Hypogyny and Epigyny
- f) Syconus fruit

Q.3 Multiple choice question 10

- 1) The Root developing from any part of the plant other than the Radicle are known as-----.
 - a) Tap root
 - b) Adventitious root
 - c) Fleshy tap root
 - d) None of root

- 2) The node and internode are found on -----
 - a) Tap root
 - b) Adventitious root
 - c) Stem
 - d) All of these

- 3) Arrangement of two leaves at each node is called as ----- phyllotaxy.
 - a) Alternate
 - b) Opposite
 - c) Whorled
 - d) None of these

- 4) Leaf tendrils are found in-----.
- Cucurbita
 - Vitis
 - Pisum sativum
 - Passiflora
- 5) Napiform root is found in -----.
- Radish
 - Turnip
 - Carrot
 - Asparagus
- 6) The axis of inflorescence is called as -----
- Petiole
 - Pedicel
 - Peduncle
 - None of these
- 7) Androgynophore is the Internode between -----.
- Corolla & Androecium
 - Androecium & Gynoecium
 - Calyx and corolla
 - Corolla & Androecium & androecium and Gynoecium
- 8) The flower with superior ovary is called as
- Hypogynous
 - Perigynous
 - Epigynous
 - None of these
- 9) In pentacarpellary syncarpous condition the carpels are -----.
- Many and united
 - Five and free
 - Five and united
 - All of these
- 10) The fruit of mango is -----.
- Pome
 - Nut
 - Drupe
 - Berry

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2031
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-III) Examination Nov/Dec 2017
Botany Paper-VII Taxonomy of Angiosperms

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Draw neat and well labeled diagram wherever necessary.
- Q.1 Give an account of Bentham and Hooker's system of classification and add a note on its merits and demerits 20
- OR**
- Explain taxonomy in relation to anatomy and embryology with suitable example. 20
- Q.2 Give an account of family Acanthaceae with its economic importance and systematics. 20
- OR**
- Write short notes (any four) 20
- a) Economic importance of Mimosaceae
 - b) Floral structure of Lamiaceae
 - c) Etaerio of berries
 - d) Economic importance of Poaceae
 - e) Floral structure of Annonaceae
- Q.3 Multiple choice questions. 10
- 1) Double fertilization is salient feature of -----.
 - a) Gymnosperms
 - b) Pteridophytes
 - c) Cryptogams
 - d) Angiosperm
 - 2) Standard wings and keel arrangement is found in -----.
 - a) Poaceae
 - b) Apocynaceae
 - c) Fabaceae
 - d) Acanthaceae
 - 3) Epicalyse and monadelphous stamens are features of family -----.
 - a) Maloaceae
 - b) Myctaginaceae
 - c) Acanthaceae
 - d) Poaceae

- 4) Flower in family Liliaceae is -----.
- Tetramerous
 - Trimerous
 - Pentamerous
 - All of these
- 5) *Solanum tuberosum* is botanical name of -----.
- Potato
 - Tomato
 - Brinjal
 - Wheat
- 6) Flower of family Nyctaginaceae is -----.
- Dichlamydous
 - Monochlamydous
 - Polychlamydous
 - None of these
- 7) Pentamerous flower with monocarpellary ovary is found in -----.
- Caesalpinaceae
 - Liliaceae
 - Solanaceae
 - Apocynaceae
- 8) *Polyalthia* and *Artabotrys* are genera included under -----.
- Malvaceae
 - Acanthaceae
 - Annonaceae
 - None of these
- 9) Which of the following families are monocotyledons?
- Caesalpinaceae and mimosaceae
 - Acanthaceae and liliaceae
 - Liliaceae and lamiaceae
 - Poaceae and liliaceae
- 10) Verticillaster inflorescence is combination of -----.
- Racemose and cymose inflorescence
 - Monochasial and polychasial cyme
 - Raceme and head inflorescence
 - None of these

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2032
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-III) Examination Nov/Dec 2017
Botany Paper-VIII Plant Ecology

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Draw neat and well labeled diagram wherever necessary.

Q.1 What is ecological pyramid? Explain different ecological pyramid in ecosystem? 20

OR

Describe soil erosion and soil conservation. 20

Q.2 Explain morphological, physiological and anatomical adaptations. 20

OR

Write short notes (any four) 20

- a) Producers
- b) Life forms
- c) Mangroove vegetation's
- d) Photoperiodism
- e) Solar spectrum
- f) Physiological adaptations in xerophytes

Q.3 Multiple choice questions. 10

- 1) The plants growing in warm habitat are called -----.
 - a) Microtherms
 - b) Megatherms
 - c) Mesotherms
 - d) Hekistotherms

- 2) Gravel type of soil has -----mm diameter of particles.
 - a) More than 2
 - b) 0.05 to 1.5
 - c) Less than 0.002
 - d) Less than 2

- 3) Aerenchyma in the cortex is found in -----.
 - a) Xerophytes
 - b) Hydrophytes
 - c) Halophytes
 - d) All of these

- 4) Phylloclade and cladode are adaptations in -----.
 - a) Xerophytes
 - b) Epiphytes
 - c) Halophytes
 - d) None of these

- 5) Alpine zone vegetation in Himalaya is found above -----.
 - a) 1000 MSL
 - b) 2000 MSL
 - c) 4000 MSL
 - d) None of these

- 6) Eichhornia crassipes is -----.
 - a) Rooted hydrophyte
 - b) Amphibious xerophyte
 - c) Free floating hydrophyte
 - d) Amphibious hydrophyte

- 7) Complex organic substances are converted into simpler organic components by -----
 - a) Producers
 - b) Consumers
 - c) Carnivores
 - d) Decomposers

- 8) The conversion of ammonia and nitrates into free nitrogen is called -----.
 - a) Denitrification
 - b) Sedimentation
 - c) Ammonification
 - d) Leaching

- 9) In grassland ecosystem the pyramid of biomass is
 - a) Inverted
 - b) Horizontal
 - c) Spindle
 - d) Upright

- 10) Numerical strength of species in community is represented by -----.
 - a) Megatherms
 - b) Cover
 - c) Basal area
 - d) Frequency

SUBJECT CODE NO:- N-2167
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-IV) Examination Nov/Dec 2017
Botany Paper- XI Gymnosperms and Utilization of Plants

[Time: 1:30 Hours]

[Max.Marks: 50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions
- ii) Illustrate your answer with suitable labeled diagram.

Q.1 Give an account of general characters and classification of Gymnosperms. 20

OR

Give an account of cultivation, harvesting and economic importance of cotton.

Q.2 What is fossilization? Explain in detail types of fossils. 20

OR

Write short notes on any four of the following.

- a) Salient features of Gymnosperms
- b) Lyginopteris
- c) Medicinal use of turmeric
- d) Eco. Importance of sugarcane
- e) Eco. Importance of tea
- f) Use of clove in spices

Q.3 Multiple choice questions 10

- 1) The most common ornamental species of cycas is -----
 - a) Cycas circinalis
 - b) Cycas revoluta
 - c) Cycas ramphii
 - d) Cycas beddomei
- 2) Endosperms in Gymnosperms is formed -----
 - a) At the time of fertilization
 - b) Before fertilization
 - c) After fertilization
 - d) None of these
- 3) Megasporophyll is the term used in gymnosperms to denote -----
 - a) Carpels
 - b) Stemans
 - c) Leaves
 - d) Female cone

- 4) Gnetum is -----
a) Monoecious
b) Dioecious
c) Both of these
d) None of these
- 5) ----- plants bears winged pollen grains
a) Gnetum
b) Cycas
c) Pinus
d) Ephedra
- 6) Botanical name of sunflower is -----
a) Oryza
b) Helianthus annuus
c) Oryza sativa
d) Arachis hypogea
- 7) ----- is a timber yielding plants.
a) Cumin
b) Teak
c) Korphad
d) Plurotus
- 8) In India sugarcane is generally planted during -----
a) January to March
b) April to June
c) July to September
d) All of these
- 9) Cinnamon is generally propagated by -----
a) Seed
b) Axillary bud
c) Root
d) None of these
- 10) Timber & gum yielding plant is -----
a) Tuberose
b) Tote
c) Korphad
d) Neem

Total No. of Printed Pages:2

SUBJECT CODE NO: N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XX (A) Diversity of Angiosperms -II

[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 whenever necessary.

Q.1 Define binomial nomenclature. Add a note on its principle and rules. 20

OR

Explain in detail modern trends in taxonomy. Add a note on Cytotaxonomy and chemotaxonomy.

Q.2 Describe in detail family Liliaceae up to floral formula and floral diagram along with two plants of economic importance. 20

OR

Write short notes on (any four)

- a) Herbaria
- b) Botanic garden
- c) Floral characters of Euphorbiaceae
- d) Advance characters in Orchid flower
- e) Economic importance of oleaceae
- f) Merits of Takhtajan system

Q.3 Multiple choice questions. 10

- 1) Binomial nomenclature first used by
 - a) Hutchinson
 - b) Gaspard Bauhin
 - c) Armen Takhajan
 - d) Adolf Engler
- 2) Botanic garden of NBRI is located at
 - a) Mumbai
 - b) Bhopal
 - c) Lucknow
 - d) Chennai
- 3) Who is associated with Uppsala University
 - a) Theophrastus
 - b) Caesalpinno
 - c) Bentham
 - d) Linnaeus

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- 4) Families of flowering plants 1959 is the publication of
 - a) John Hutchinson
 - b) Charles Darwin
 - c) Carlous Linnaeus
 - d) Armen Takhtajan

- 5) Primitive group of Takhajan system of classification is
 - a) Myrtilles
 - b) Liliales
 - c) Magnoliales
 - d) Pandanales

- 6) Advanced group of Engler and Prandtl system of classification is
 - a) Cucurbitales
 - b) Ranales
 - c) Rhamnales
 - d) Geraniales

- 7) Genus chenopodium belongs to family
 - a) Olcaceae
 - b) Amaranthaceae
 - c) Scrophulariaceae
 - d) None of these

- 8) Botanical name of 'Shatawari' is
 - a) Withania somnifera
 - b) Aloe vera
 - c) Gloriosa superba
 - d) Asparagus racemosus

- 9) The flower of commelinaceae is
 - a) Dimerous
 - b) Trimerons
 - c) Tetramerous
 - d) Pentamerous

- 10) Zygomorphic condition of flower is the common character of family ----
 - a) Olcaceae
 - b) Commelinaceae
 - c) Liliaceae
 - d) Orchidaceae

Total No. of Printed Pages:2

SUBJECT CODE NO:N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
(B) Economic Botany

[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 whenever necessary.
- Q.1 Describe origin morphology. Cultivation harvesting and uses of Maize. 20
- OR**
- Write in brief
- a) Morphology, cultivation and uses of soya bean
 - b) Morphology cultivation and uses of Blackgram
- Q.2 Describe morphology cultivation harvesting processing and uses of Jute. 20
- OR**
- Write short notes on any four of the following.
- a) Cultivation and uses of coffee
 - b) Morphology and uses of Brinjal
 - c) Processing of cotton
 - d) Cultivation and harvesting of Mango
 - e) Cultivation and harvesting of potato
 - f) Morphology and uses of orange
- Q.3 Multiple choice question. 10
- 1) Pulses belongs to family -----
 - a) Malvaceae
 - b) Rutaceae
 - c) Poaceae
 - d) Fabaceae
 - 2) Spices are mainly grown in -----
 - a) Punjab
 - b) Kerala
 - c) Odisha
 - d) Telngana
 - 3) Cotton fibre is rich in -----
 - a) Hemicellulose
 - b) Lignin
 - c) Cellulose
 - d) Protein

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- 4) Onion crop is -----
 - a) Perennial
 - b) Annual
 - c) Seasonal
 - d) Biennial

- 5) Scientific name of Maize is ----
 - a) Oryza sativa
 - b) Sorghum vulgare
 - c) Zea mays
 - d) Avena sativa

- 6) Black pepper fruit is a -----
 - a) Achene
 - b) Drupe
 - c) Pod
 - d) Aggregate

- 7) Banana plant is propagated by
 - a) Stem cutting
 - b) Stolon
 - c) Seed
 - d) Rhizome

- 8) Which grains are staple food for human beings
 - a) Oil seed
 - b) Millets
 - c) Pulses
 - d) Cereals

- 9) Soybean oil is -----
 - a) Nondrying oil
 - b) Semi – drying oil
 - c) Essential oil
 - d) Drying oil

- 10) Orchids are distributed in which region of India
 - a) Southern
 - b) Eastern
 - c) Northern
 - d) Western

Total No. of Printed Pages:2

SUBJECT CODE NO:N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XX (C) Microbiology and Disease Management

[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 whenever necessary.
- Q.1 Define Microscopy. Describe in detail principle and working of compound microscope and electron microscope. 20
- OR**
- Describe in detail Industrial application of Microorganisms in Milk production and Antibiotics.
- Q.2 Describe in detail the preventive methods of plant – disease management 20
- OR**
- Write short – notes on (any four)
- a) Plant clinic
 - b) Field sanitation
 - c) Pneumatic Air pump
 - d) B .T. cotton
 - e) Aureofungin
 - f) Captan
- Q.3 Multiple choice questions. 10
- 1) ---- has firstly discovered the crude microscope.
 - a) Leeuwenhoek
 - b) Mendel
 - c) Koch
 - d) Darwin
 - 2) ---- is used in preparation of Bacterial slide.
 - a) Cotton blue
 - b) Gram's stain
 - c) Light green
 - d) Acetocarmine
 - 3) The instrument used for dry sterilization method is -----
 - a) Autoclave
 - b) Pressure cookers
 - c) Oven

- d) Incubator
- 4) ---- is used as mostly a Biopesticide
- a) Copper sulphate
 - b) Neem
 - c) Baristin
 - d) Zinc phosphate
- 5) Burning of infected plant residue is the best method at -----
- a) Sanitation
 - b) Sterilization
 - c) Crop rotation
 - d) Hyper parasitism
- 6) ---- Techniques used to protect seed borne fungal diseases.
- a) Seed germination
 - b) Seed treatment
 - c) Seed packing
 - d) Seed certification
- 7) The chemical ---- is commonly used for the purpose of soil sterilization
- a) Formaldehyde
 - b) Captan
 - c) 2, 4- D
 - d) Copper sulphate
- 8) The example of sulphur fungicide is -----
- a) Nemagon
 - b) Dexon
 - c) Thiram
 - d) Aureofungin
- 9) ----- is the systemic fungicide
- a) Agrason
 - b) Streptomycin
 - c) Baristin
 - d) Copper sulphate
- 10) ---- is a genetically modified organism
- a) MLO
 - b) PPLO
 - c) TMV
 - d) GMO

Total No. of Printed Pages:2

SUBJECT CODE NO:N-2146
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-VI) Examination Nov/Dec 2017
Botany Paper- XX (D) Bioinformatics

[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 labeled diagrams whenever necessary.

Q.1 What is mean by data presentations? Explain bar chart and histogram in data presentation. 20

OR

Explain in detail mean and standard deviation by giving suitable example

Q.2 Explain types of computer and add a note on storage devices. 20

OR

Write a short note on (any four) of the following

- a) Sampling techniques
- b) Output devices
- c) Chi – square test
- d) Linux
- e) WAN
- f) PUBMD

Q.3 Multiple choice questions. 10

- 1) The term biometry was coined by -----
 - a) Fischer
 - b) Francis Galton
 - c) Kara Pearson
 - d) Walter Weldon
- 2) Circle divide into sectors proportional to frequency of items shown is called -----
 - a) Bar chart
 - b) Pie chart
 - c) Histogram
 - d) Polygon
- 3) Which of following is not a measure of central location
 - a) Mean
 - b) median
 - c) Variation
 - d) Mode

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- 4) The operating system manages -----
 - a) Memory
 - b) Processor
 - c) Disk & I/C devices
 - d) All of above
- 5) C P U has a number of ----- register
 - a) Store
 - b) Hidden
 - c) Switch
 - d) Address
- 6) Processed data is called as -----
 - a) Data
 - b) Data item
 - c) Information
 - d) None of above
- 7) The student test is -----
 - a) A test for comparing average
 - b) Test for variance
 - c) Non parametric test
 - d) None of above
- 8) Primary memory is also called as -----
 - a) Semi conductor
 - b) Magnetic memory
 - c) Optical memory
 - d) None of these
- 9) Line diagram in the form of ---- line
 - a) Rectangle
 - b) Vertical
 - c) Pie
 - d) Bar
- 10) Most frequency occurring value of data set is called a -----
 - a) Mean
 - b) Mode
 - c) Median
 - d) File

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2161
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-II) Examination Nov/Dec 2017
Botany Paper- IV Diversity of Cryptogams-II

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B
- i. Attempt all questions.
 - ii. Illustrate your answer with suitable labeled diagrams.

Q.1 Give an account of external and internal morphology of Marchantia. 20

OR

Give an account of sporophyte of Funaria. 20

Q.2 Give an account of the Vegetative structure of the sporophyte of Lycopodium. 20

OR

Write short notes on (any four) 20

- A. Classification of Bryophytes as per G.M. Smith.
- B. Vegetative reproduction in Funaria.
- C. Sporangium of Equisetum
- D. Selaginella cone
- E. Heterospory in pteridophytes.
- F. Alternation of generation in psilotum.

Q.3 Multiple choice questions. 10

1. In bryophytes embryonic development of the zygote takes place in the-----.
 - a. Capsule
 - b. Archegonium
 - c. Anthridium
 - d. Sporangium
2. These groups of plants are known as plant amphibians -----.
 - a. Fungi
 - b. Algae
 - c. Bryophytes
 - d. Pteridophytes
3. Scales bearing bryophytes is -----.
 - a. Anthoceros
 - b. Polytricum
 - c. Funaria
 - d. Marchantia

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4. Spirally arranged sessile leaves are present in -----.
 - a. Funaria
 - b. Marchantia
 - c. Equisetum
 - d. Lycopodium

5. In bryophytes spores are -----.
 - a. Non – flagellate
 - b. Multiflagellate
 - c. Biflagellate
 - d. None of these

6. In equisetum stem vascular canals are present -----.
 - a. Below the ridges
 - b. Below the grooves
 - c. Between ridges and grooves
 - d. Inner to the endodermis

7. The earth's first forests were formed belonged to-----.
 - a. Psilopsida
 - b. Lycopsidea
 - c. Pteropsida
 - d. Sphenopsida

8. ----- plant is commonly known as water fern.
 - a. Marsilea
 - b. Selaginella
 - c. Lycopodium
 - d. Psilotum

9. Ligulate laves are found in -----.
 - a. Lycopodium
 - b. Selaginella
 - c. Equisetum
 - d. Marsilea.

10. Endophytic mycorrhiza is a feature of rhizome of -----.
 - a. Marsilea
 - b. Equisetum
 - c. Psilotum
 - d. Lycopodium

SUBJECT CODE NO: N-2162
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-II) Examination Nov/Dec 2017
Botany Paper-V
Histology, Anatomy and Embryology

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions.
- ii) Draw neat and well – labeled diagrams wherever necessary.

Q.1 Explain in detail the complex permanent tissues. 20

OR

Describe in detail the secondary growth in dicot roots.

Q.2 Describe various agents, types and subtypes of pollination mechanisms and add a note on entomophily. 20

OR

Write short notes on: (Any 4)

- a) Position – wise types of meristems
- b) Structure and functions of phloem
- c) Growth rings
- d) Primary structure of monocot roots
- e) Helobial and nuclear endosperm
- f) Anemophily

Q.3 **Multiple choice questions :** 10

- 1) ----- tissue is exclusively absent in roots.
 - a) Parenchyma
 - b) Collenchyma
 - c) Sclerenchyma
 - d) Phloem
- 2) Aquatic plants can float in water due to the presence of -----
 - a) Chlorenchyma
 - b) Aerenchyma
 - c) Xylem
 - d) Stomata
- 3) Angiosperms are characterized by the exclusive presence of -----
 - a) Tracheids
 - b) Parenchyma
 - c) Schlerenchyma
 - d) Vessels

4) Schlerenchyma is a dead mechanical tissue because of the presence of -----

- a) Cytoplasm
- b) Vacuoles
- c) Cell wall
- d) Lignin

5) In dicot stems, pericycle is situated -----

- a) Above the epidermis
- b) Below cortex
- c) Above endodermis
- d) Below endodermis

6) Protoderm differentiates into -----

- a) Cortex
- b) Epidermis
- c) Pericycle
- d) Periblem

7) Conjoint, collateral & open vascular bundles are found in -----

- a) Dicots
- b) Ferns
- c) Monocots
- d) Mosses

8) Double fertilization is found in -----

- a) Gymnosperms
- b) Pteridophytes
- c) Monocots
- d) Angiosperms

9) In angiosperms, endosperm is -----

- a) Triploid
- b) Diploid
- c) Haploid
- d) None of the above

10) In porogamy, pollen tube enter ovule through -----

- a) Micropyle
- b) Chalaza
- c) Integuments
- d) Funiculus

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2168
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-IV) Examination Nov/Dec 2017
Botany Paper- XII
Plant Physiology

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Illustrate your answers with suitable well labeled diagram.
- Q.1 Explain active and passive absorption of water in plants. 20
- OR**
- What are plant growth regulators? Discuss the role and practical applications of auxins.
- Q.2 Explain in detail the C₄ pathway of photosynthesis. 20
- OR**
- Write short notes of any four :-
- a) Plasmolysis
 - b) Types of transpiration
 - c) Properties of enzymes
 - d) Sigmoid growth curve
 - e) Ultrastructure of mitochondria
 - f) Fermentation
- Q.3 Multiple choice questions:- 10
1. Solution having equal concentration as that of cell sap is called –
 - a) Hypotonic solution
 - b) Isotonic solution
 - c) Hypertonic solution
 - d) Neutral solution
 2. Semipermeable membrane allows the diffusion of –
 - a) Solute
 - b) Solvent
 - c) Both a & b
 - d) None of above
 3. The water available for plants for absorption from soil is –
 - a) Gravitational water
 - b) Hygroscopic water
 - c) Capillary water
 - d) Chemically bound water

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4. Kidney shaped guard cells are present in –
 - a) Dicot plants
 - b) Monocot plants
 - c) Both a & b
 - d) Algae

5. Co –enzyme is chemically a –
 - a) Protein
 - b) Vitamin
 - c) Fat
 - d) Carbohydrate

6. Coconut milk is rich in
 - a) Auxins
 - b) Gibberellins
 - c) Cytokinins
 - d) Ethylene

7. Parthenocarpy is induced by the application of –
 - a) Gibberellins
 - b) Auxins
 - c) Cytokinins
 - d) Ethylene

8. First stable compound in HSK cycle is –
 - a) Malic acid
 - b) Oxalic acid
 - c) Aspartic acid
 - d) Pyruvic acid

9. Incomplete oxidation of glucose into P.A. with several intermediate steps is –
 - a) T.C.A pathway
 - b) Glycolysis
 - c) E.T.S
 - d) None of above

10. Terminal cytochrome of respiratory chain which donate electron to oxygen is –
 - a) Cytochrome b
 - b) Cytochrome a₁
 - c) Cytochrome c
 - d) Cytochrome a₃

Total No. of Printed Pages:02

SUBJECT CODE NO:- N-2009
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
Botany Paper- XV- (Cell Biology & Molecular Biology)

[Time: 1:30 Hours]

[Max. Marks: 50]

N.B Please check whether you have got the right question paper.
i) Attempt all question.
ii) Draw neat and well-labeled diagram whenever necessary.

- Q.1 Describe structure and functions of Golgi complex. 20
OR
Write in details Replication of DNA 20
- Q.2 What is chromosomal aberrations? Explain deletion and duplication. 20
OR
Write short note on (Any four) 20
a) Eukaryotic cell
b) Endoplasmic reticulum
c) Prophase-I
d) t-RNA
e) Euchromatin
f) Trisomy
- Q.3 Multiple choice questions 10
1) Cell theory was proposed by _____
a) Robert Hooke
b) Leeuwenhoek
c) Schleiden and schwann
d) Messelson and Stahl
- 2) Cell wall is _____
a) Permeable
b) Semipermeable
c) Selectively permeable
d) Impermeable
- 3) Cell membrane is made up _____
a) Pectin
b) Cellulose
c) Proteins and Lipids
d) Chitin and lignin

- 4) _____ is involved in protein synthesis
- Golgi complex
 - Lysosome
 - Vacuole
 - Ribosome
- 5) _____ is called reductional cell division.
- Meiosis
 - Mitosis
 - Amitosis
 - All above
- 6) Centromeres are arranged on equatorial plate during _____
- Telophase
 - Anaphase
 - Metaphase
 - Prophase
- 7) Left handed coiling of DNA occurs in _____
- C- DNA
 - Z- DNA
 - b- DNA
 - A- DNA
- 8) Centromere occur in the middle of the chromosome in _____
- Telocentric
 - Acrocentric
 - Sub metacentric
 - Metacentric
- 9) Balbiani ring is present in _____
- Polytene chromosome
 - Lampbrush chromosome
 - Supernumary chromosome
 - All the above
- 10) Secondary constriction is also called as _____
- Satellite
 - Telomer
 - Nucleolar organizer
 - Centromere

Total No. of Printed Pages:02

SUBJECT CODE NO: N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
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.
i) Attempt all questions.
ii) Draw neat and well labeled diagrams

Q.1 Write an essay on Biodiversity 20
OR
Comment on Endemism and Hot spot.

Q.2 Describe in detail family cucurbitaceae up to floral formula and floral diagram. 20
OR

Write short note on (any four)

- a) In-situ conservation
- b) Threatened categories
- c) Merits and demerits of Bentham & Hooker's system
- d) Floral character of family Brassicaceae
- e) Diagnostic characters of family Apiaceae
- f) Artificial system of classification.

Q.3 Multiple choice questions: 10

- 1 Ex-situ conservation includes
 - a) National Park
 - b) Botanical garden
 - c) Sanctuary
 - d) None of these
- 2 Different rice varieties is the example of following diversity type
 - a) Genetic diversity
 - b) Species diversity
 - c) Ecological diversity
 - d) None of these
- 3 Sanjay Gandhi National Park is located in _____ state.
 - a) Gujarat
 - b) Madhya Pradesh
 - c) Maharashtra
 - d) Kerala

- 4 Largest number of plant diversity distributed in _____ country.
- India
 - China
 - Nepal
 - Brazil
- 5 Genus *Nelumbo* belongs to family
- Capparidaceae
 - Rhamnaceae
 - Lythraceae
 - Nymphaeaceae
- 6 Hesperidium fruit found in the family
- Rutaceae
 - Capparidaceae
 - Brassicaceae
 - Apiaceae
- 7 *Terminalia bellirica* belongs to the family
- Apiaceae
 - Combretaceae
 - Papaveraceae
 - Brassicaceae
- 8 Parietal placentation is common in the family
- Rutaceae
 - Nymphaeaceae
 - Rhamnaceae
 - None of these
- 9 A.P. de Candolle system is based upon _____ system
- de Jussieu
 - Caspar Bauhin
 - Hutchinson
 - None of these
- 10 *Argemone mexicana* belongs to family
- Cucurbitaceae
 - Lythraceae
 - Magnoliaceae
 - Papaveraceae

Total No. of Printed Pages:02

SUBJECT CODE NO: N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
Elective Paper Botany Paper- XVI-(B) Plant Breeding and Seed Technology

[Time: 1:30 Hours]

[Max.Marks: 50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Illustrate your answer with suitable labeled diagram whenever necessary.

Q.1 Describe aims and objectives of plant breeding. 20

OR

Write in brief :

- a) Plant Introduction
- b) Randomized Block Design

Q.2 What is mutation? Describe role of mutation in crop improvement 20

OR

Write short notes on (any four)

- a) Pure line selection
- b) Latin square design
- c) Bulk method
- d) Non Endospermic seed
- e) Nucleus seed
- f) Seed Marketing

Q.3 Multiple choice question 10

- 1) The ancient method of crop improvement is
 - a) Introduction
 - b) Selection
 - c) Hybridization
 - d) Mutation
- 2) Self pollinated plant is also known as
 - a) Allogamous
 - b) Cliestogamous
 - c) Chasogamous
 - d) Autogamous
- 3) Clonal selection is practiced in
 - a) Cross pollinated
 - b) self pollinated
 - c) Vegetatively propagated
 - d) All of the above

- 4) Pedigree selection is followed in
 - a) Cross pollinated
 - b) Self pollinated
 - c) Often cross pollinated
 - d) None of the above

- 5) Intergeneric hybridization is a cross between
 - a) Same species
 - b) Different species
 - c) Different genes
 - d) Same genes

- 6) Anthesis phenomena is observed in
 - a) Gynoecium
 - b) Stamens
 - c) Anthers
 - d) Stigma

- 7) In three way cross following are involved
 - a) One Inbred
 - b) One single cross and Inbred
 - c) Two Inbred
 - d) Four Inbred

- 8) Protoandry is phenomena
 - a) Male organ mature first
 - b) Female organs mature first
 - c) Synchronized maturity
 - d) All of the above

- 9) Genetically most pure seed
 - a) Nucleus seed
 - b) Foundation seed
 - c) Certified seed
 - d) Register seed

- 10) Certified seed is progeny of
 - a) Breeder seed
 - b) Nucleus seed
 - c) Foundation seed
 - d) All of the above

Total No. of Printed Pages:02

SUBJECT CODE NO: N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
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.
i) Attempt all questions.
ii) Draw neat and well labeled diagrams whenever necessary

Q.1 Describe in detail concept and importance of seed pathology. Add a note on methods to study seed borne pathogens. 20

OR

Give an account on classification of plant diseases on the basis of causal organism

Q.2 Describe in detail symptoms, causal organism, disease cycle and management of Tikka disease of ground nut. 20

OR

Write short notes on (Any four)

- a) Koch's postulates
- b) Grassy shoot of sugarcane
- c) Yellow vein mosaic of bean
- d) Telial stage of puccinia
- e) Little leaf of brinjal
- f) Powdery mildew of rose

Q.3 Multiple choice questions 10

- 1) The father of Indian mycology is _____
 - a) K. C. Mehta
 - b) E. J. Butler
 - c) Mundukar
 - d) P. D. Sharma
- 2) Which of the following stage occurs on wheat of puccinia _____
 - a) Uredial
 - b) Basidial
 - c) Aecial
 - d) Pycnidial
- 3) Grain smut of jowar is caused by _____
 - a) Claviceps
 - b) Sphacelotheca
 - c) Puccinia
 - d) Alternaria

- 4) Damping off of mustard caused by _____
- a) Pythium
 - b) Rhizopus
 - c) Taphrina
 - d) Ustilago
- 5) IARI was established in _____
- a) 1919
 - b) 1917
 - c) 1921
 - d) 1905
- 6) Angular leaf spot of cotton is caused by _____
- a) Xanthomonas
 - b) Pseudomonas
 - c) Rhizobium
 - d) Azotobacter
- 7) The leaves are arched , puckered and distorted symptom is known as _____
- a) Leaf blight
 - b) Leaf spot
 - c) Leaf curl
 - d) Chlorosis
- 8) Secondary host of puccinia graminis tritici is _____
- a) Wheat
 - b) Rice
 - c) Beriberi
 - d) Maize
- 9) Late blight of potato is caused by _____
- a) Phytophthora
 - b) Trichoderma
 - c) Ustilago
 - d) Mucor
- 10) Black rot of onion is caused by _____
- a) Penicillium
 - b) Aspergillus
 - c) Fusarium
 - d) Rhizobium

Total No. of Printed Pages:02

SUBJECT CODE NO:-N_2010
FACULTY OF SCIENCE
B.Sc. T.Y (Sem-V) Examination Nov/Dec 2017
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.
i) Attempt all questions.
ii) Draw neat and well labeled diagrams wherever necessary.

Q.1 Explain the roles of transgenic plants in agriculture. 20

OR

Q.2 Explain principles and procedure in r-DNA technology & add a note on DNA libraries. 20
Explain principles of tissue culture and add a note on Anther culture.

OR

Short note on (any four) of the following.

- a) Vectors
- b) DNA polymerase
- c) Meristem culture
- d) Organogenesis
- e) Plant genome project
- f) DST

Q.3 Multiple choice questions 10

- 1) Diameter of DNA helix is _____
 - a) 19 Å
 - b) 20 Å
 - c) 21 Å
 - d) 22 Å

- 2) DNA replication in prokaryotes is _____
 - a) Discontinuous
 - b) Continuous
 - c) Semi discontinuous
 - d) Conservative

- 3) The replication fork is _____ shaped
 - a) Alfa
 - b) Beta
 - c) Gamma
 - d) Theta

- 4) Plastids are also called _____
- a) Plastosome
 - b) Chromosomes
 - c) Hyposomes
 - d) Episomes
- 5) DNA finger printing method is very useful for _____
- a) Polymorphism
 - b) DNA test for identity & relationship
 - c) Forensic studies
 - d) All of these
- 6) Primary explanation technique was developed by
- a) Harrison
 - b) Crick
 - c) Karl
 - d) Niels
- 7) During 'gene cloning' which is called as gene taxi _____
- a) Protozoa
 - b) Bacterium
 - c) Plasmid
 - d) Vaccine
- 8) Which of the following is specifically used in genetic engineering
- a) Restriction endonuclease
 - b) Ligase
 - c) Gyrase
 - d) E.coli
- 9) Which one of the following is known as Opal
- a) UGA
 - b) GUG
 - c) UAA
 - d) UAG
- 10) Largest bacterial plasmid has _____ kilobases
- a) 5
 - b) 2000
 - c) 3000
 - d) 5000

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2025
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination Nov/Dec 2017
Botany Paper-I Diversity of Cryptogams-I

[Time: 1:30 Hours]

[Max. Marks:50]

N.B Please check whether you have got the right question paper.
i) Attempt all questions.
ii) Illustrate your answer with suitable labeled diagram.

Q.1 Explain in detail general characters, classification of viruses. Add a note on TMV. 20

OR

Explain in detail systematic position, Thallus structure and reproduction in Batrachospermum. 20

Q.2 Describe systematic position, structure of mycelium and reproduction in Albugo. 20

OR

Write short note on (any Four) 20

- a) Structure of Usnea
- b) General characters of Bacteria
- c) Botrydium thallus
- d) Economic importance of algae
- e) Mycelial structure of mucor
- f) Economic importance of fungi

Q.3 Multiple choice questions. 10

1. Asexual reproductive structure in bacteria is known as-----
 - a) Akinetes
 - b) Heterocyst
 - c) Endospore
 - d) Exospore

2. The bacteria that commonly lives in animal and human intestine is -----
 - a) Vibro cholerae
 - b) Bascillus anthracis
 - c) Coryne bacterium
 - d) Escherichia coli

3. TMV contains -----
 - a) RNA and proteins
 - b) DNA
 - c) Both DNA and RNA
 - d) DNA and proteins

4. Lichen shows -----
 - a) Symbiosis of Algae and fungi
 - b) Parasitic relation of algae &fungi
 - c) Mycorrhizae relationship
 - d) Commensalism

5. Female sex organ of chara is known as -----.
 - a) Nucule
 - b) Globule
 - c) Mucule
 - d) None of these

6. Father of modern algology of India is-----.
 - a) Bharadwaj
 - b) Desikacharya
 - c) M. O. P Iyengar
 - d) Fritsch

7. Aplanospores are -----.
 - a) Ciliated motile spores
 - b) Ciliated resting spores
 - c) Non – motile, Non ciliate resting spores
 - d) Ciliated and non – motile spores

8. Fungi lacking cross walls in the mycelium belong to -----.
 - a) Ascomycetes
 - b) Phycomycetes
 - c) Deuteromycetes
 - d) Basidiomycetes

9. The obligate parasitic fungi absorbs nourishment their the host cell through -----.
 - a) The surface
 - b) Appresoria
 - c) Rhizoids
 - d) Haustoria

10. Asci are formed in -----.
 - a) Ascobolus
 - b) Saccharomyces
 - c) Penicillium
 - d) All the above

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2026
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination Nov/Dec 2017
Botany Paper-II Morphology of Angiosperms

[Time: 1:30 Hours]

[Max. Marks: 50]

N.B Please check whether you have got the right question paper.
i) Attempt all questions.
ii) Illustrate your answer with suitable labeled diagram.

Q.1 Explain in details part of leaf and modification of leaf? 20

OR

Describe general character of stem and sub – aerial modification of stem. 20

Q.2 Define flower. Describe the part of typical flower and type of placentation. 20

OR

Write short note on (Any Four) 20

- a) Fusi form and Nipi form root
- b) Bulb and tuber
- c) Dispersal of seed and fruit by animals
- d) Verticillaster inflorescence
- e) Hypogyny and Epigyny
- f) Syconus fruit

Q.3 Multiple choice question 10

- 1) The Root developing from any part of the plant other than the Radicle are known as-----.
 - a) Tap root
 - b) Adventitious root
 - c) Fleshy tap root
 - d) None of root

- 2) The node and internode are found on -----
 - a) Tap root
 - b) Adventitious root
 - c) Stem
 - d) All of these

- 3) Arrangement of two leaves at each node is called as ----- phyllotaxy.
 - a) Alternate
 - b) Opposite
 - c) Whorled
 - d) None of these

- 4) Leaf tendrils are found in-----.
- Cucurbita
 - Vitis
 - Pisum sativum
 - Passiflora
- 5) Napiform root is found in -----.
- Radish
 - Turnip
 - Carrot
 - Asparagus
- 6) The axis of inflorescence is called as -----
- Petiole
 - Pedicel
 - Peduncle
 - None of these
- 7) Androgynophore is the Internode between -----.
- Corolla & Androecium
 - Androecium & Gynoecium
 - Calyx and corolla
 - Corolla & Androecium & androecium and Gynoecium
- 8) The flower with superior ovary is called as
- Hypogynous
 - Perigynous
 - Epigynous
 - None of these
- 9) In pentacarpellary syncarpous condition the carpels are -----.
- Many and united
 - Five and free
 - Five and united
 - All of these
- 10) The fruit of mango is -----.
- Pome
 - Nut
 - Drupe
 - Berry

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2031
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-III) Examination Nov/Dec 2017
Botany Paper-VII Taxonomy of Angiosperms

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Draw neat and well labeled diagram wherever necessary.
- Q.1 Give an account of Bentham and Hooker's system of classification and add a note on its merits and demerits 20
- OR**
- Explain taxonomy in relation to anatomy and embryology with suitable example. 20
- Q.2 Give an account of family Acanthaceae with its economic importance and systematics. 20
- OR**
- Write short notes (any four) 20
- a) Economic importance of Mimosaceae
 - b) Floral structure of Lamiaceae
 - c) Etymology of berries
 - d) Economic importance of Poaceae
 - e) Floral structure of Annonaceae
- Q.3 Multiple choice questions. 10
- 1) Double fertilization is salient feature of -----.
 - a) Gymnosperms
 - b) Pteridophytes
 - c) Cryptogams
 - d) Angiosperm
 - 2) Standard wings and keel arrangement is found in -----.
 - a) Poaceae
 - b) Apocynaceae
 - c) Fabaceae
 - d) Acanthaceae
 - 3) Epicalyse and monadelphous stamens are features of family -----.
 - a) Maloaceae
 - b) Myctaginaceae
 - c) Acanthaceae
 - d) Poaceae

- 4) Flower in family Liliaceae is -----.
- Tetramerous
 - Trimerous
 - Pentamerous
 - All of these
- 5) *Solanum tuberosum* is botanical name of -----.
- Potato
 - Tomato
 - Brinjal
 - Wheat
- 6) Flower of family Nyctaginaceae is -----.
- Dichlamydous
 - Monochlamydous
 - Polychlamydous
 - None of these
- 7) Pentamerous flower with monocarpellary ovary is found in -----.
- Caesalpinaceae
 - Liliaceae
 - Solanaceae
 - Apocynaceae
- 8) *Polyalthia* and *Artabotrys* are genera included under -----.
- Malvaceae
 - Acanthaceae
 - Annonaceae
 - None of these
- 9) Which of the following families are monocotyledons?
- Caesalpinaceae and mimosaceae
 - Acanthaceae and liliaceae
 - Liliaceae and lamiaceae
 - Poaceae and liliaceae
- 10) Verticillaster inflorescence is combination of -----.
- Racemose and cymose inflorescence
 - Monochasial and polychasial cyme
 - Raceme and head inflorescence
 - None of these

Total No. of Printed Pages:2

SUBJECT CODE NO:- N-2032
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-III) Examination Nov/Dec 2017
Botany Paper-VIII Plant Ecology

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions.
 - ii) Draw neat and well labeled diagram wherever necessary.

Q.1 What is ecological pyramid? Explain different ecological pyramid in ecosystem? 20

OR

Describe soil erosion and soil conservation. 20

Q.2 Explain morphological, physiological and anatomical adaptations. 20

OR

Write short notes (any four) 20

- a) Producers
- b) Life forms
- c) Mangroove vegetation's
- d) Photoperiodism
- e) Solar spectrum
- f) Physiological adaptations in xerophytes

Q.3 Multiple choice questions. 10

- 1) The plants growing in warm habitat are called -----.
 - a) Microtherms
 - b) Megatherms
 - c) Mesotherms
 - d) Hekistotherms

- 2) Gravel type of soil has -----mm diameter of particles.
 - a) More than 2
 - b) 0.05 to 1.5
 - c) Less than 0.002
 - d) Less than 2

- 3) Aerenchyma in the cortex is found in -----.
 - a) Xerophytes
 - b) Hydrophytes
 - c) Halophytes
 - d) All of these

- 4) Phylloclade and cladode are adaptations in -----.
 - a) Xerophytes
 - b) Epiphytes
 - c) Halophytes
 - d) None of these

- 5) Alpine zone vegetation in Himalaya is found above -----.
 - a) 1000 MSL
 - b) 2000 MSL
 - c) 4000 MSL
 - d) None of these

- 6) Eichhornia crassipes is -----.
 - a) Rooted hydrophyte
 - b) Amphibious xerophyte
 - c) Free floating hydrophyte
 - d) Amphibious hydrophyte

- 7) Complex organic substances are converted into simpler organic components by -----
 - a) Producers
 - b) Consumers
 - c) Carnivores
 - d) Decomposers

- 8) The conversion of ammonia and nitrates into free nitrogen is called -----.
 - a) Denitrification
 - b) Sedimentation
 - c) Ammonification
 - d) Leaching

- 9) In grassland ecosystem the pyramid of biomass is
 - a) Inverted
 - b) Horizontal
 - c) Spindle
 - d) Upright

- 10) Numerical strength of species in community is represented by -----.
 - a) Megatherms
 - b) Cover
 - c) Basal area
 - d) Frequency

SUBJECT CODE NO:- N-2167
FACULTY OF SCIENCE
B.Sc. S.Y (Sem-IV) Examination Nov/Dec 2017
Botany Paper- XI Gymnosperms and Utilization of Plants

[Time: 1:30 Hours]

[Max.Marks: 50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions
- ii) Illustrate your answer with suitable labeled diagram.

Q.1 Give an account of general characters and classification of Gymnosperms. 20

OR

Give an account of cultivation, harvesting and economic importance of cotton.

Q.2 What is fossilization? Explain in detail types of fossils. 20

OR

Write short notes on any four of the following.

- a) Salient features of Gymnosperms
- b) Lyginopteris
- c) Medicinal use of turmeric
- d) Eco. Importance of sugarcane
- e) Eco. Importance of tea
- f) Use of clove in spices

Q.3 Multiple choice questions 10

- 1) The most common ornamental species of cycas is -----
 - a) Cycas circinalis
 - b) Cycas revoluta
 - c) Cycas ramphii
 - d) Cycas beddomei
- 2) Endosperms in Gymnosperms is formed -----
 - a) At the time of fertilization
 - b) Before fertilization
 - c) After fertilization
 - d) None of these
- 3) Megasporophyll is the term used in gymnosperms to denote -----
 - a) Carpels
 - b) Stemans
 - c) Leaves
 - d) Female cone

- 4) Gnetum is -----
a) Monoecious
b) Dioecious
c) Both of these
d) None of these
- 5) ----- plants bears winged pollen grains
a) Gnetum
b) Cycas
c) Pinus
d) Ephedra
- 6) Botanical name of sunflower is -----
a) Oryza
b) Helianthus annuus
c) Oryza sativa
d) Arachis hypogea
- 7) ----- is a timber yielding plants.
a) Cumin
b) Teak
c) Korphad
d) Plurotus
- 8) In India sugarcane is generally planted during -----
a) January to March
b) April to June
c) July to September
d) All of these
- 9) Cinnamon is generally propagated by -----
a) Seed
b) Axillary bud
c) Root
d) None of these
- 10) Timber & gum yielding plant is -----
a) Tuberose
b) Tote
c) Korphad
d) Neem