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**SUBJECT CODE NO:- L-2019**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y. (Sem-II) Examination March/April 2019**  
**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

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

Q.1 Describe the external and internal structure of Marchantia gametophyte. 20

OR

Explain in detail structure of funaria sporophyte and add a note on T.S of stem. 20

Q.2 Describe the external structure of psilotum sporophyte and add a note on T.S of stem. 20

OR

Write in brief ( any four) 20

- 1) Economic importance of Bryophyta
- 2) Selaginella strobilus
- 3) T.S of Marsilea petiole
- 4) Rhizophore
- 5) Lycopodium forms of Leaves
- 6) Ligule

Q.3 Multiple choice questions: 10

- 1) In which of the following groups would you place a plant which produces spores and embryos but lacks seeds and vascular tissue?  
 a) Bryophytes    b) pteridophytes    c) Gymnosperms    d) Algae
- 2) In the life –cycle of Moss which of the generation is dominant ?  
 a) Haploid gametophyte    b) Diploid gametophyte  
 c) Haploid sporophyte    d) Diploid sporophyte
- 3) A bryophyte differ from pteridophyte in .  
 a) Archegonia    b) lack of vascular tissue  
 c) Flagellated antherozoids    d) Independent gametophytes

- 4) Perichaetium is seen in :  
a) Archegoniophore    b) Antheridiophore    c) Sporangiphore    d) elaterophore
- 5) In Funaria reduction division takes place in the :  
a) Anthridium    b) Archegonium    c) capsule    d) zygote
- 6) Which of the following is a living member of sphenopsida  
a) Equisetum    b) Marsilea    c) Selaginella    d) Lycopodium
- 7) The gametophyte of psilotum is  
a) Exosporic    b) endosporic    c) dioecious    d) Endoscopic
- 8) Which pteridophyte is also known as ground pine?  
a) Selaginella    b) Marsilea    c) Psilotum    d) Lycopodium
- 9) Selaginella lepidophylla is known as  
a) Resurrection plant    b) club moss    c) Christmas plant    d) monkey puzzle plant
- 10) In which plane Marsilea sporocarp shows complete gelatinous ring .  
a) H.L.S    b) V.T.S    c) T.S    d) V.L.S

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**SUBJECT CODE NO:- L-2020**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y. (Sem-II) Examination March/April 2019**  
**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

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

Q.1 Describe different types of stomata. 20

OR

Describe the development and structure of Periderm. 20

Q.2 Describe the mechanism of double fertilization and give its significance. 20

OR

Write short notes on ( any four ) 20

- a) Tunica corpus theory
- b) L.S of Anatropous ovule
- c) Xylem Tracheid's
- d) Nuclear endosperm
- e) Heart wood and sap wood
- f) Advantages and disadvantages of self pollination.

Q.3 Multiple choice questions. 10

- 1) The vascular bundles in a monocot root are -----  
a) Radial    b) collateral    c) Bicollateral    d) Leptocentric
- 2) Thin walled cells with intercellular spaces are called -----  
a) Sclerenchyma    b) Parenchyma    c) collenchyma    d) Idioblasts .
- 3) Dendrochronology is the study of -----  
a) Height of a tree    b) Diameter  
c) Fruit production    d) Age of a tree by counting the number
- 4) Vascular bundles having protoxylem towards periphery is called -----  
a) Endarch    b) Exarch    c) Radial    d) collateral

- 5) Companion cells are seen associated with -----  
 a) Collenchyma      b) secondary cambium      c) sieve tubes      d) medullary parenchyma
- 6) In angiosperms the ovule represents -----  
 a) Megasporeophyll      b) Mega sporangium      c) A megaspore      d) Megaspore mother cell
- 7) In Angiosperms the number of meiotic divisions required to produce 100 microspore is -----  
 a) 100                      b) 50                      c) 25                      d) 125
- 8) Seeds are called products of sexual reproduction because they -----  
 a) Give , rise to new plants  
 b) Are formed by fusion of gametes  
 c) Can be stored for long time  
 d) Are formed by fusion of pollen tubes
- 9) Embryo sac is found in -----  
 a) Endosperm      b) embryo      c) ovule      d) seed
- 10) Pollination by ants is called -----  
 a) Antomophily      b) Ornithophily      c) Hydrophily      d) Entomophily

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**SUBJECT CODE NO:- L-2023**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y. (Sem-VI) Examination March/April 2019**  
**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 & well- labeled diagram wherever necessary.
- Q.1 Describe interaction of gene. Explain in detail complementary gene or duplicate recessive epistasis? 20
- OR**
- Describe phenyl ketonuria & Alkaptonuria. 20
- Q.2 Describe technique of genetic engineering & add a note on applications of genetic engineering? 20
- OR**
- Write shorts notes on any four: 20
- a) Sex determination in drosophila
  - b) Back cross
  - c) Plasmids
  - d) Recombinant DNA technology
  - e) Gene cloning
  - f) Phase vectors
- Q.3 Multiple choice questions. 10
1. Who is the father of genetics?
    - a. Morgan
    - b. Bateson
    - c. Mendel
    - d. None of these
  2. A cross between  $f_1$  & one of its parents is called as
    - a. Back cross
    - b. Test cross
    - c. Triple way cross
    - d. None of these
  3. What is the long form of  $f_1$  ?
    - a. First generation
    - b. Filial generation
    - c. First filial generation
    - d. None of these
  4. The ratio of duplicate dominant epistasis?
    - a. 9:7
    - b. 9:3:4
    - c. 12:3:1
    - d. 15:1
  5. Who proposed the chromosomal theory of sex determination?
    - a. Mcclung
    - b. Mendel
    - c. Morgan
    - d. Punnett

6. Mechanism of sex determination in birds?
  - a. XX-XY
  - b. XY-XX
  - c. ZZ-ZW
  - d. ZW-ZZ
7. Genes exclusively present on Y chromosome are called as?
  - a. Gynandromorphs
  - b. Haploid
  - c. Holandric
  - d. None of these
8. Process of transfer of gene into plants is called as?
  - a. Recombinant
  - b. Transformation
  - c. Transduction
  - d. None of these
9. Detection of genetic disorders at early stage called?
  - a. amniocentesis
  - b. Elisa
  - c. ECG
  - d. None of these
10. The most common plasmid vector used in genetic engineering is
  - a. PBR<sup>322</sup>
  - b. PBR<sup>328</sup>
  - c. PBR<sup>325</sup>
  - d. None of these

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**SUBJECT CODE NO:- L-2024**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y. (Sem-VI) Examination March/April 2019**  
**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 Describe modern trends in plant taxonomy studied by you. 20
- OR
- What is binomial nomenclature? Write a note on principles and rules of nomenclature. 20
- Q.2 Describe in detail family liliaceae up to floral formula and floral diagram. Add a note on economic importance of two plants of this family. 20
- OR
- Write short notes on (any four) 20
- a) Taxonomic keys
  - b) Chemotaxonomy
  - c) Floral characters and floral formula of orchidaceae
  - d) Floral formula, floral diagram and economic importance of any two plants of family convolvulaceae.
  - e) Merits and demerits of Engler and Prantl's system.
  - f) Floral characters of commelinaceae
- Q.3 Multiple Choice questions 10
1. Royal botanic garden is situated at.
    - a. Leningrad
    - b. New Delhi
    - c. Kew
    - d. New york
  2. Binomial nomenclature first used by:
    - a. Hutchinson
    - b. Gas pard bauhin
    - c. Armen Takhtajan
    - d. Adolf Engler
  3. 'Die Naturlichen Pflanzen familien' is published by
    - a. Hutchinson
    - b. Takhtajan
    - c. Bentham and hooker
    - d. Engle and Prantl
  4. The new name of Indian botanic garden is...
    - a. Netaji Subhas Chandra Bose
    - b. Ravindranath Tagore
    - c. Acharya Jagdish chanra bose
    - d. Birbal sahani
  5. Holotype when it is not designated called
    - a. Paratype
    - b. Lectotype
    - c. Isotype
    - d. Syntype

6. Cyathium inflorescence is seen in
  - a. Scrophulariaceae
  - b. Amaranthaceae
  - c. convolvulaceae
  - d. euphorbiaceae
7. labellum is present in flower of
  - a. Liliaceae
  - b. asclepiadaceae
  - c. commelinaceae
  - d. orchidaceae
8. Botanical name of teak is.
  - a. Acacia nilotica
  - b. Azadirachta indica
  - c. Mangifera indica
  - d. Tectona grandis
9. Gloriosa superba (Kal Lavi) belongs to
  - a. Orchidaceae
  - b. Liliaceae
  - c. Poaceae
  - d. Amaranthaceae
10. Coroline corona is common character of family
  - a. Asclepiaceae
  - b. Verbenaceae
  - c. Convolvulaceae
  - d. Commelinaceae

OR



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**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y. (Sem-VI) Examination March/April 2019**  
**Botany Paper- XX**  
**(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 Write in detail origin, history, morphology, cultivation & use of Mustard. 20
- OR
- Write in brief
- a) Morphology, cultivation & uses of black gram 20
  - b) Cultivation & uses of Rice
- Q.2 Write in detail Morphology, cultivation, processing & uses of cotton. 20
- OR
- Write short notes on any four of the following: 20
- a) Cultivation & uses of cowpea
  - b) Processing & uses of coffee
  - c) Cultivation & harvesting of mango
  - d) Cultivation & uses of chilli
  - e) Morphology & uses : Brinjal
  - f) Cultivation & uses of Rose
- Q.3 Multiple Choice questions: 10
- 1) In maize, food material is stored in
    - a. Endosperm
    - b. Aleurone
    - c. Cotyledon
    - d. Scutellum
  - 2) Scientific name of Pigeon Pea is
    - a. *Cajanus cajan*
    - b. *Phaseolus mungo*
    - c. *Phaseolus radiata*
    - d. *Cicer arietinum*
  - 3) Which of the following is not cereal?
    - a. Rice
    - b. Wheat
    - c. Gram
    - d. Maize
  - 4) Sunhemp fiber is \_\_\_\_\_
    - a. Surface fiber
    - b. Bast fiber
    - c. Rough fiber
    - d. Coir
  - 5) King of the spices is \_\_\_\_\_
    - a. Black pepper
    - b. Cardamom
    - c. Chilli
    - d. Clove

- 6) Lycopene is commonly found in
  - a. Potato
  - b. Brinjal
  - c. Tomato
  - d. Cardamom
- 7) Which of the following is parthincarpic fruit
  - a. Mango
  - b. Orange
  - c. Banana
  - d. Potato
- 8) Mango is a fruit
  - a. Temperate
  - b. Sub-tropical
  - c. Tropical
  - d. None of the above
- 9) Soyabean oil is
  - a. Drying oil
  - b. Semi-drying oil
  - c. Essential oil
  - d. None of all
- 10) The onion bulbs are modified
  - a. Leaves
  - b. Stem
  - c. Root
  - d. Fruit

OR

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**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y. (Sem-VI) Examination March/April 2019**  
**Botany Paper- XX**  
**(C) Microbiology and Disease Management**

[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 Give an account of concept of Micrometry. 20  
 OR  
 Give an account of Microorganism in the biological world. 20
- Q.2 What is eradication? Add a note on different methods of Eradication. 20  
 OR  
 Write short notes on (any four) 20
- a) Field sanitation
  - b) Captan
  - c) B.T cotton
  - d) Culture Media
  - e) Plant disease clinic
  - f) Pyrethrum
- Q.3 Multiple Choice questions: 10
- 1) Which of the following is not a part of compound Microscope?  
 a. Nose piece      b. Condenser      c. Mirror      d. ocular Micrometer
  - 2) Bavistin is  
 a. Pesticide      b. Systemic fungicide      c. Nematicide      d. Weedicide
  - 3) Fumaric acid Produced by  
 a. Aspergillus terrus      b. Aspergillus nigere  
 c. Rhizopus nigricans      d. Fusarium sp.
  - 4) \_\_\_\_\_ is fungal Antagonist  
 a. Penicillium digitatum      b. Trichoderma harzianum  
 c. Aspergillus flavus      d. Aspergillus niger

- 5) Seed treatment is done to control
  - a. Soil borne disease
  - b. Air borne disease
  - c. Seed borne disease
  - d. None of these
- 6) Crop rotation helps in
  - a. Growth of pathogen
  - b. Soil infertility
  - c. Slowing of crop growth
  - d. Eradication of disease
- 7) Most effective Pesticide is
  - a. Carbamates
  - b. Organophosphate
  - c. Organochlorines
  - d. All of these
- 8) Mycotoxins are \_\_\_\_\_
  - a. Chemicals
  - b. Produced by filamentous fungi
  - c. Non-essential for fungal growth
  - d. Not essential for reproduction
- 9) Tobacco Mosaic disease caused by
  - a. Fungi
  - b. Bacteria
  - c. Virus
  - d. All of these
- 10) Which method is legal restriction on the transport of Agricultural commodities
  - a. Sanitation
  - b. Quarantine
  - c. Seed treatment
  - d. None

OR

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**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y. (Sem-VI) Examination March/April 2019**  
**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 Describe in detail bar chart and pie diagram method of data presentation. 20
- OR
- Explain in detail measures of central tendency. Add a note on its applications. 20
- Q.2 What is application software? Explain types with examples. 20
- OR
- Write short notes on any four of the following 20
- a) Sample techniques
  - b) Histogram and polygon
  - c) Storage devices
  - d) Probability
  - e) Search engine
  - f) Linux
- Q.3 Multiple Choice questions: 10
- 1) What is the median of the sample 5, 5, 11, 9, 8, 5, 8?  
 a. 5                      b. 6                      c. 8                      d. 9
  - 2) The observation which occurs most frequently in a sample is the  
 a. Median              b. Mean deviation      c. Standard deviation      d. Mode
  - 3) The suitable average for qualitative data is  
 a. Mean                b. Mode                c. Median                d. Geometric mean
  - 4) Karl Pearson in 1990 has rediscovered the following test  
 a. T-test                b. Chi-square              c. F-test                d. Standard error
  - 5) \_\_\_\_\_ is an electronic hardware that transmits computer signal through a telephone line.  
 a. Modem                b. Model                c. Mouse                d. Fax

- 6) A microprocessor unit, a memory unit and an input/ output unit form a \_\_\_\_\_.
  - a. CPU
  - b. Compiler
  - c. Micro computer
  - d. ALU
- 7) In power point, each page is called \_\_\_\_\_.
  - a. A work sheet
  - b. A slide
  - c. A text page
  - d. A presentation
- 8) What does HTTP stand for
  - a. Hypertext Transfer protocol
  - b. Head tail transfer protocol
  - c. Hyper text transfer plotter
  - d. Hypertext texting protocol
- 9) \_\_\_\_\_ are software which is used to do a particular task.
  - a. Operating system
  - b. Program
  - c. Data
  - d. Software
- 10) Collection of the essential data in bio information is known as \_\_\_\_\_.
  - a. Files
  - b. Directory
  - c. Error
  - d. Data base

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**SUBJECT CODE NO:- L-2027**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. S.Y. (Sem-IV) Examination March/April 2019**  
**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 well labeled diagram.

- Q.1 Describe morphology of Pinus and add a note on reproduction in pinus. 20  
**OR**  
 Explain general character and classification of Gymnosperms. 20
- Q.2 Give an account of cultivation, harvesting and economic importance of cotton. 20  
**OR**  
 Write short notes on any four: 20
- a) Economic importance of Gymnosperms
  - b) Impression
  - c) Lygenopteris
  - d) Tea
  - e) Ashwagandha
  - f) Cinnamon
- Q.3 Multiple choice questions. 10
1. Naked ovule is the characteristic feature of  
 a. Algae      b. Bryophytes      c. Pteridophytes      d. None of these
  2. Anemophilous pollination is very common in \_\_\_\_\_.  
 a. Angiosperm      b. Gymnosperm      c. Both of these      d. None of these
  3. Coralloid roots are \_\_\_\_\_.  
 a. Positively geotropic      b. Positively phototropic  
 c. Negatively phototropic      d. None of these
  4. Vessels are absent in following plants  
 a. Cycas      b. Pinus      c. Gnetum      d. Both a and b
  5. Saugharum officinarum is the botanical name of \_\_\_\_\_.  
 a. Beet root      b. Jowar      c. Sugarcane      d. Tea

6. Botanical name of babul is \_\_\_\_\_.
  - a. Mimosa pudica
  - b. Acacia catechu
  - c. Albezzi lebbek
  - d. Acacia nilotica
7. Wheat is \_\_\_\_\_.
  - a. Tree
  - b. Shrub
  - c. Annual herb
  - d. Perennial herb
8. \_\_\_\_\_ State of India is the largest producer of cotton.
  - a. Andhra Pradesh
  - b. Uttar Pradesh
  - c. Orissa
  - d. Maharashtra
9. 'Korphad' plant belongs to \_\_\_\_\_ family.
  - a. Liliaceae
  - b. Poaceae
  - c. Nyctagenaceae
  - d. Malvaceae
10. Molasses is the byproduct of \_\_\_\_\_ plant after extraction.
  - a. Cotton
  - b. Jute
  - c. Sugar cane
  - d. None of these



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**SUBJECT CODE NO:- L-2028**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. S.Y. (Sem-IV) Examination March/April 2019**  
**Botany Paper- XII**  
**Plant Physiology**

[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 What is transpiration? Add a note on mechanism of opening & closing of stomata. 20
- OR**
- What are microelements? Add note on role and deficiency symptoms? 20
- Q.2 Explain in detail the concept of glycolysis? 20
- OR**
- Write short notes (Any four) 20
- a) Active absorption
  - b) Source & sink relationship
  - c) Sigmoid growth curve
  - d) Auxin
  - e) Non-cyclic photophosphorylation
  - f) C 4 cycle
- Q.3 Multiple choice questions. 10
- 1) Plasmolysis occur due to
    - a) Absorption    b) Osmosis    c) Endo osmosis    d) Exo osmosis
  - 2) Loss of water from stomata is known as
    - a) Guttation    b) Exudation    c) Transpiration    d) Evaporation
  - 3) Denitrifying bacterium is
    - a) Pseudomonas    b) Rhizobium    c) Azatobactor    d) Nitrobactor
  - 4) Many enzymes secreted in inactive form to protect
    - a) Cell membrane    b) Mitochondria    c) Cell protein    d) Cell DNA
  - 5) Non – protein part of an enzyme is known as
    - a) Holoenzyme    b) Vitamin    c) Apoenzyme    d) Prosthetic group

- 6) Formation of fruit without fertilization is  
a) Parthenocarpy      b) Double fertilization      c) Pollination      d) All of these
- 7) At night green plants release  
a)  $CO_2$       b) Water      c)  $O_2$       d) All of these
- 8) Cytokinin is a derivative of  
a) Adenine      b) Guanine      c) Thiamine      d) Cytidine
- 9) EMP pathway is another name of  
a) Krebs cycle      b) Glycolysis      c) Oxysomes      d) ETS
- 10) Visible product of photosynthesis is  
a) Glucose      b) Cellulose      c) Starch      d) Fructose