

Total No. of Printed Pages: 2

**SUBJECT CODE NO: - Y-2037**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y (Sem-I)**  
**Examination March / April - 2023**  
**Botany Paper-I Diversity of Cryptogams-I**

**[Time: 1:30 Hours]****[Max. Marks: 50]**

Please check whether you have got the right question paper.

N. B

- 1) Attempt all Questions.
- 2) Illustrate your answer with well labelled diagram.

Q1 Describe in detail forms of thalli in Lichens. Add a note on its economic Importance 20

**OR**

Describe in detail general characters of Algae. Give the classification according to F.E Fritsch. 20

Q2 Explain the life cycle of Agaricus. 20

**OR**

write a short notes on (any four) 20

- a) Thallus structure of Nostoc
- b) Vegetative reproduction in Chara
- c) crustose Lichens.
- d) Economic Importance of fungi
- e) Cleistothecium
- f) Tikka disease.

Q3 Multiple choice questions. 10

- 1) Tobacco Mosaic Virus is \_\_\_\_  
 a) spherical shaped    b) rod shaped    c) cuboidal    d) oval shaped.
- 2) Viruses that attacks bacteria are, Called as  
 a) Lyso phase    b) bacterio phase    c) Virophage    d) None of these
- 3) coccus bacteria are \_\_\_\_ shaped.  
 a) Rod    b) Comma    c) Rounded    d) None of these

- 4) The symbiotic association between algae and fungi is called as \_\_\_\_\_.  
a) mycorrhiza    b) Lichen    c) VAM    d) Mutualism.
- 5) phycology is the study of \_\_\_\_\_.  
a) Algae    b) fungi    c) Bryophyta    d) Pteridophyta
- 6) Batrachospermum is \_\_\_\_\_ Algae.  
a) Brown    b) Green    c) Red    d) yellow
- 7) \_\_\_\_\_ Algae is also known as stonewort.  
a) Sargassum    b) Chara    c) Batrachospermum    d) Botrydium.
- 8) The edible fungi are \_\_\_\_\_.  
a) Rusts    b) Mushrooms    c) moulds    d) mildews
- 9) penicillin which is used as a antibiotic is obtained from \_\_\_\_\_.  
a) Bacteria    b) Fungi    c) Algae    d) Lichens.
- 10) The structure in which an ascospore are formed in \_\_\_\_\_.  
a) Basidium    b) sporangium    c) Ascus    d) None of these

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**SUBJECT CODE NO: - Y-2038**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y (Sem-I)**  
**Examination March / April - 2023**  
**Botany Paper-II Morphology of Angiosperms**

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N. B

- 1) Attempt all questions
- 2) Illustrate your answer with suitable labelled diagram.

Q1 Define leaf & explain modifications of leaf. 20M

**OR**

Explain modifications of Roots.

Q2 Define fruit & explain types of simple fruit. 20M

**OR**

White short notes on (any four)

- a) Pitcher
- b) Types of Roots
- c) Bulb
- d) Umbel inflorescence
- e) Epigynous flower
- f) seed dispersal by animal

Q3 Multiple choice questions: 10M

1. Tap root is commonly found in \_\_\_\_\_.  
 a) Monocotyledons      b) Dicotyledons      c) Bryophytes      d) All of these
2. Leaf tendrils are bound in \_\_\_\_\_.  
 a) Pisum sativum      b) Passiflora      c) Melia azadifacta      d) Acacia nilotica
3. Verticillaster is a type of \_\_\_\_\_.  
 a) Inflorescence      b) Flower      c) Fruit      d) seed

4. A flower is said to be complete when it has \_\_\_\_\_.
  - a) calyx & corolla
  - b) Androecium & gynoecium
  - c) calyx, corolla, Androecium
  - d) calyx, corolla, Androecium & gynaecium
5. Vexillary aestivation is found in \_\_\_\_\_ Corolla.
  - a) Infundibulum
  - b) Bilabiate
  - c) cruciform
  - d) papilionaceous
6. Internode between corolla & Androecium and androecium & gynoecium is called as \_\_\_\_\_.
  - a) Androphore
  - b) Gynophore
  - c) Gyandrophore
  - d) All of these
7. Drupe is a type of \_\_\_\_\_.
  - a) seed
  - b) Flower
  - c) Fruit
  - d) Inflorescence
8. Sharp apex of leaf is called as \_\_\_\_\_.
  - a) Acute
  - b) obtuse
  - c) Acuminate
  - d) cuspidate
9. Stalk of inflorescence is called as \_\_\_\_\_.
  - a) pedicel
  - b) petiole
  - c) peduncle
  - d) Rachis
10. In bicarpellary, apocarpous condition, Carpels are \_\_\_\_\_.
  - a) Two & united
  - b) Two & free
  - c) Three & united
  - d) Three & free

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**SUBJECT CODE NO: - YY-2348**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y (Sem- II)**  
**Examination March / April - 2023**  
**Botany Paper-V Histology, Anatomy & Embryology Paper-IV**

[Time: 1:30 Hours]

[Max. Marks: 40]

Please check whether you have got the right question paper.

N. B

- 1) All questions are compulsory.
- 2) All question carry-equal marks.
- 3) Draw neat diagram and give labels where ever necessary.

Q1 Define tissue? Describe the simple permanent tissue in plants. 10

**OR**

Explain in Brief.

- a) L. S. of shoot apex.
- b) Nectarines and oil glands.

Q2 Describe secondary growth in sunflower stem. 10

**OR**

Explain in Brief.

- a) Annual rings.
- b) Periderm

Q3 write short notes on. (Any Two) 10

- a) cellular endosperm.
- b) contrivances for Self Pollination
- c) structure of monocot seed.

Q4 Multiple choice questions 10

1. There are three types of meristematic tissue, apical \_\_\_\_\_ Lateral.  
 a) Simple    b) complex    c) Intercalary    d) vascular
2. Permanent tissues are classified into \_\_\_\_\_ types.  
 a) One    b) Two    c) Three    d) four
3. Tunica corpus theory was put forth by \_\_\_\_\_  
 a) Nageli    b) Schmidt    c) Hanstein    d) Eames.
4. Guard cells controls the opening and closing of \_\_\_\_\_  
 a) Digestive gland    b) stomata    c) Trichomes    d) Nectaries
5. In \_\_\_\_\_ types of Parenchymatous tissue chloroplast is found.  
 a) xylem    b) chlorenchyma    c) Sclerenchyma    d) Phloem.
6. \_\_\_\_\_ is also known as ground tissue.  
 a) Epidermis    b) Endodermis    c) cortex    d) cambium
7. Casparian strips are present in \_\_\_\_\_  
 a) Endodermis    b) Hypodermis    c) Pericycle    d) Epidermis

8. In Angiosperms \_\_\_\_\_ functions as male gametophyte.  
a) Pollen grains    b) Nucellus    c) ovules    d) stamens
9. A set of three nuclei present at micropylar end in embryo sac are \_\_\_\_\_  
a) Polar nuclei                      b) synergids and egg  
c) Antipodal cells                      d) None of these
10. Pollination takes place through the agency of water is called as \_\_\_\_\_  
a) Anemophily    b) Hydrophily    c) Zoophily    d) Entomophily

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**SUBJECT CODE NO: - Y-2052**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y (Sem-II)**  
**Examination March / April - 2023**  
**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-labelled diagram Wherever necessary.

- Q1 Describe the structure of Marchantia gametophyte 20
- OR**
- a) General Characters of Bryophytes 10
  - b) structure of Funaria sporophyte 10
- Q2 Give an account of external and Internal structure in Marsilea sporophyte 20
- OR**
- write in brief (any Four) 20
1. Apophysis
  2. Types of steles in Lycopodium
  3. Selaginella strobilus
  4. Economic Importance of Bryophytes
  5. Prothallus of Equisetum
  6. Psilotum sporophyte
- Q3 Multiple choice questions 10
- 1) Which of the Following is non vascular embryophyte?  
 a) Thallophyta    b) Bryophyta    c) pteridophyte    d) All of the above
  - 2) Bryophytes are of \_\_\_\_\_  
 a) Great Economic value  
 b) Non value at all  
 c) Great ecological Importance  
 d) No aesthetic value
  - 3) Elaters are present in sporangium of  
 a) Marchantia    b) funnaria    c) Selaginella    d) Riccia
  - 4) Gemmae are vegetative reproductive structure found in  
 a) Angiosperm    b) Algae    c) Bryophytes    d) Pteridophytes
  - 5) Function of elaters is  
 a) Absorption of food    b) Conduction of sap  
 c) spore dispersal    d) provide support

- 6) Evolutionary Importance characters of Selaginella is
- a) Heterosporous nature      b) Rhizophore
  - c) strobil                              d) Ligule
- 7) Seed habit originated in
- a) Bryophytes      b) Pteridophytes      c) Fungi      d) Gymnosperm
- 8) Commonly these pteridophyte plant called as 'ground pines'
- a) Psilotum      b) Marsilea      c) Lycopodium      d) Selaginella
- 9) If Sori develops in a special nut Like structure, then it is called as sporocarp it occurs in
- a) Marsilea      b) Lycopodium      c) Psilotum      d) Equisetum
- 10) Psilotum plant is
- a) Disporous      b) Trisporous      c) Tetrasporous      d) Homosporous

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**SUBJECT CODE NO: - YY-2347**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y (Sem- II)**  
**Examination March / April - 2023**  
**Botany Paper-IV Diversity of Cryptogams-II**

[Time: 1:30 Hours]

[Max. Marks: 40]

Please check whether you have got the right question paper.

N. B

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labelled diagrams .

Q1 Give an amount of male & female reproductive structure of Marchantia. 10

OR

Describe in brief.

- a. Sporophyte of funaria
- b. Economic importance of Bryophytes

Q2 Explain gametophytic stage of marsilea. 10

OR

Describe in brief.

- a. Sporangium of Equisetum
- b. Dehiscence of sporocarp in Marsilea

Q3 Write short notes on (Any two) 10

- a. General characters of Bryophytes.
- b. T. S. of Lycopodium leaf
- c. Synangium of psilotum

Q4 Multiple choice questions. 10

1. In Bnyophytes embryonic development of the zyrote takes place in the \_\_\_\_\_
  - a. Capsule
  - b. Archegonium
  - c. Antheridium
  - d. Sporangium
2. Liver warts is common name of \_\_\_\_\_
  - a. Funaria
  - b. Selaginella
  - c. Marchantia
  - d. Marsilea
3. The protonema is a stage in the life cycle of \_\_\_\_\_
  - a. Riccia
  - b. Fanaria
  - c. Anthoceros
  - d. Marchantia
4. The state present in Equisetum is \_\_\_\_\_
  - a. Haplostele
  - b. Actinosteale
  - c. plectosteale
  - d. Siphonosteale
5. Father of Indian Bryology is \_\_\_\_\_
  - a. S. K. Panday
  - b. R. S. Chopra
  - c. S. R. Kashyap
  - d. K.L Mehata

6. Gemma cup is found in \_\_\_\_\_
  - a. Marchantia
  - b. Anthoceros
  - c. Sphagnum
  - d. Riccia
7. Formation of elater is characteristics of \_\_\_\_\_
  - a. Riccia
  - b. Anthoceros
  - c. Funaria
  - d. Marchantia
8. Spike moss is the common name of \_\_\_\_\_
  - a. Lycopodium
  - b. Selaginella
  - c. Equisetum
  - d. Pteris
9. Anthoceros is commonly known as \_\_\_\_\_
  - a. Bladder worts
  - b. stone worts
  - c. Hornworts
  - d. Liverworts
10. Rhynia was first discovered from \_\_\_\_\_
  - a. India
  - b. America
  - c. china
  - d. Holland

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**SUBJECT CODE NO: - Y-2053**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. F.Y (Sem-II)**  
**Examination March / April - 2023**  
**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 & well labelled diagrams whenever necessary.

Q1 What are epidermal tissues? Describe in detail different types of stomata. 20

**OR**

Describe different theories of cellular organization of root and shoot apex.

Q2 Explain in detail the development of male gametophyte in angiosperms. 20

**OR**

Write short note on: - (any 4) 20

- a. Glandular and non-glandular trichomes
- b. Xylem vessel thickenings
- c. Anatomy of dorsiventral leaf.
- d. Functions of phellem, phellogen, phelloderm.
- e. Contrivances of self-pollinations.
- f. Anemophily

Q3 Multiple choice questions. 10

1. \_\_\_\_\_ plants have vessels in xylem.  
 a) Pteridophytes    b) Angiosperms    c) Algae    d) Bryophytes
2. Conjoint, collateral & open vascular bundles are found in \_\_\_\_\_.  
 a) monocots    b) Dicots  
 c) Both dicots and monocots    d) None of the plants
3. In Hydrophytes, floating ability is due to the presence of \_\_\_\_\_ tissue.  
 a) collenchyma    b) chlorenchyma  
 c) sclerenchyma    d) Aerenchyma
4. \_\_\_\_\_ increase the diameter of stem & root.  
 a) Intercalary meristem    b) Apical meristem  
 c) Lateral meristem    d) All of the these
5. Stomata are the example of \_\_\_\_\_.  
 a) Secretory tissues    b) Permanent tissues  
 c) meristematic tissues    d) Epidermal tissues

6. \_\_\_\_\_ tissues are found in all soft plant parts.
  - a) Parenchyma                      b) collenchyma
  - c) sclerenchyma                  d) None of the above
7. Tunica corpus theory is connected with \_\_\_\_\_
  - a) Root apex    b) Root cap    c) shoot apex    d) secondary growths
8. In embryogenesis, fusion of male gamete and polar nuclei results in \_\_\_\_\_
  - a) Endosperm    b) embryo    c) suspensor    d) Zygote
9. \_\_\_\_\_ layer of anther provides nourishment to the sporogenous tissue
  - a) Endothecium    b) middle    c) Tapetum    d) epidermal
10. After fertilisation, seed, coat develops from \_\_\_\_\_
  - a) Chalaza    b) Ovule    c) embryo sac    d) Integuments

Total No. of Printed Pages: 2

**SUBJECT CODE NO: - Y-2048**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. S.Y (Sem-III)**  
**Examination March / April - 2023**  
**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

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

Q1 Describe in detail family Liliaceae up to formula floral diagram Add a note on few plant of economic importance? 20

**OR**

Write salient features of angiosperms and add note on evolution of it. 20

Q2 Explain in detail taxonomy in relation to anatomy embryology and ecology. 20

**OR**

Write short notes on 20

- a) Concept of genus and species
- b) Floral structure of Acanthaceae
- c) Economic importance of Poaceae
- d) Racemose inflorescence
- e) Floral structure of solanaceae

Q3 Multiple choice questions 10

- 1) Family Poaceae is characterized by -----  
 a) Berry fruit    b) Pentamerous flower    c) Didynamous stamens    d) Glumes
- 2) Infundibuliform corolla is feature of -----  
 a) Solanaceae    b) Asteraceae    c) Annonaceae    d) Lamiaceae
- 3) Epicalyx growing above the calyx are found in -----family  
 a) Liliaceae    b) Malvaceae    c) Annonaceae    d) none of the above
- 4) Which of the following plant belong to family Anonaceae  
 a) Justice adhatoda L.    b) Ocimum tenuiflorum L.  
 c) Annona squamosa L.    d) Hibiscus rosa -sinensis L

- 5) Which of the following families are monocotyledons?  
a) Acanthacus and Liliaceae      b) Poaceae and Liliaceae  
c) Apocynaceae and solanaceae      d) Solanaceae and Acanthaceae
- 6) Bicarpellary ovary are present in which of the following families?  
a) Solanceae and Apocynaceae      b) Fabaceae and Nyctaginaceae  
c) Anonaceae and malvaceae      d) Anonaceae and fabaceae
- 7) Which of the following genera represent family Lamiaceae ?  
a) Hibiscus and Nerium      b) Bacopa and ocimum  
c) Allium And Hibiscus      d) catharanthus and Nerium
- 8) Triticum aestivum is botanical name of -----  
a) Wheat      b) maize      c) Rice      d) Jawar
- 9) Papilionaceous corolla is feature of----- flower.  
a) Acanthaceae      b) Poaceae      c) Fabaceae      d) Anonaceae
- 10) Which of the following plant belongs to family mimosaceae  
a) Ocimum tenuiflorum      b) Adhatoda vasica  
c) Annona Squamosa      d) Acacia Arabic

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**SUBJECT CODE NO: - Y-2049**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. S.Y (Sem-III)**  
**Examination March / April - 2023**  
**Botany Paper-VIII Plant Ecology**

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N. B

- 1) Attempt all questions.
- 2) Draw neat & well labeled diagrams wherever necessary.

Q1 What is soil profile? Describe briefly the factors that affect soil formation? 20

**OR**

Describe the floristic region of India?

Q2 Define the ecosystem. Describe the components of ecosystem? 20

**OR**

Write short notes (Any Four): -

- a) Food web
- b) Epiphytes
- c) Frequency
- d) Light
- e) Nitrogen cycle
- f) Characteristics of community

Q3 Multiple Choice Questions. 10

1. Which is the abiotic component of an ecosystem \_\_\_\_\_.  
a) Soil                      b) protein                      c) carbon                      d) All of the above
2. Denitrification most takes place in \_\_\_\_\_.  
a) Aerobic                      b) Anaerobic                      c) Both                      d) None of the above
3. Plants grows in day habitats are called as \_\_\_\_\_.  
a) Hydrophytes                      b) Mesophytes                      c) Xerophytes                      d) Helophytes

4. Indian Forest have generally, classified as the basis of \_\_\_\_\_.
- a) Temperature      b) water      c) soil      d) All of these
5. In grassland ecosystem the pyramids of energy is \_\_\_\_\_.
- a) Upright      b) Inverted      c) upright or inverted      d) None of these
6. Pedology is the study of \_\_\_\_\_.
- a) Locomotion of Animal      b) soil  
c) Rocks      d) None of these
7. Water is a \_\_\_\_\_.
- a) Polar solvent      b) Non polar solvent  
c) An Amphipathic solvent      d) None of these
8. Sunken stomata are found in the leaves of \_\_\_\_\_.
- a) Nelumbium      b) Neem      c) Maize      d) Nerium
9. Which elements are dependent on biogeochemical cycle?
- a) Carbon      b) Nitrogen      c) Sulpher      d) All of these
10. Physiognomic methods of study of plant communities were given by \_\_\_\_\_.
- a) Raunkiaer      b) Cowles      c) Post      d) Flashault

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**SUBJECT CODE NO: - Y-2063**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. S.Y (Sem-IV)**  
**Examination March / April - 2023**  
**Botany Paper- XI Gymnosperms and Utilization of Plants**

[Time: Hours 1:30]

[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 well labelled diagram.

Q1 Describe External morphology of Cycas plant add anatomical features of coralloid root of Cycas plant 20

**Or**

Explain general characters of gymnosperms add a note economic importance of Gymnosperm

Q2 Give an account on cultivation, harvesting, improved varieties and economic importance of sugarcane 20

**Or**

Write short notes on any four of following

- a. Contribution of professor Birbal sahani
- b. Male cone of Gnetum
- c. Korphad
- d. Rose
- e. Clove
- f. Teak

Q3 Multiple Choice Question 10

- 1) In which order of Gymnosperms fossils are present  
 a) Bennettitales    b) Coniferales    c) Gnetales    d) none of the above
- 2) Female cone of Pinus matura in \_\_\_\_\_  
 a) one year    b) two year    c) three year    d) four year
- 3) Pollination in Pinus is \_\_\_\_\_  
 a) Entomophilous    b) Anemophilous    c) Hydrophilous    d) Zoophilous
- 4) Sulphur shower is related to \_\_\_\_\_  
 a) Cycas    b) Pinus    c) Both    d) None of the above
- 5) Cretaceous is a period of \_\_\_\_\_  
 a) Palaeozoic era    b) Cenozoic era  
 c) Mesozoic era    d) Archaeozoic era

- 6) Botanical names of tea is \_\_\_\_\_  
a) Camellia sinensis      b) Coffea Arabica  
c) Coriandrum sativam      d) Cinnamomun verum
- 7) Oil is obtained from the seeds of  
a) Saccharum officinarum      b) Cicer arietinum  
c) Arachis hypogea      d) Saccharum bengalense
- 8) Cotton plant belongs to family  
a) Malvaceae      b) Apocynaceae      c) Solanaceae      d) Fabaceae
- 9) Which plant yield several Utilizable product producing fiber , oil & animal food  
a) Cotton      b)Sunflower      c) Jowar      d) Maize
- 10) Sharbati Sonora is the variety of  
a) Jowar      b) Wheat      c) Sunflower      d) Ground nut

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**SUBJECT CODE NO: - Y-2064**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. S.Y (Sem-IV)**  
**Examination March / April - 2023**  
**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 labelled diagram.

Q1 What is imbibition? Describe imbibition with respect to the osmotic effect and its Quantitative aspects? 20

**OR**

Discuss briefly mechanism of opening and closing of stomata and describe classical theory of its mechanism?

Q2 Define growth. Discuss various phases of growth? 20

**OR**

Write short notes on (any four)

- a) Apo enzyme
- b) Cytokining
- c) CAM pathway
- d) ATP
- e) Carrier concept
- f) Mass flow hypothesis

Q3 Multiple choice questions. 10

1. The site of photosynthesis is -----
  - a) Chloroplast
  - b) Mitochondria
  - c) Endoplasmic reticulum
  - d) Nucleus
2. End product of Calvin cycle is -----
  - a) PGA
  - b) ADP + NADP
  - c) RUBP
  - d) PGAL
3. The nature of enzyme is -----
  - a) Lipid
  - b) Vitamins
  - c) Carbohydrate
  - d) Protein

4. First phase of plant growth is -----
  - a) Cell formation phase
  - b) Cell differentiation phase
  - c) Cell elongation phase
  - d) None of the above
  
5. Transport of photosynthesis from mesophyll chloroplast to the phloem of mature leaves is -----
  - a) Phloem loading
  - b) Phloem unloading
  - c) Both a & b
  - d) None of the above
  
6. ----- of the following is a macronutrient.
  - a) Chlorine
  - b) Magnese
  - c) Zinc
  - d) Phosphorous
  
7. Osmosis is a special kind of -----
  - a) Regulation
  - b) Absorption
  - c) Diffusion
  - d) Adsorption
  
8. Uptake of water from soil by root is called as -----
  - a) Ascent of sap
  - b) Absorption of water
  - c) Both a and b
  - d) None of the above
  
9. End product of krebs cycle is -----
  - a) CO<sub>2</sub> and H<sub>2</sub>O
  - b) FADH<sub>2</sub>
  - c) NADH
  - d) All of these
  
10. Who discovered the process of photophosphorylation?
  - a) Warburg
  - b) Arnon
  - c) Calvin
  - d) Priestley

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**SUBJECT CODE NO: - Y-2041**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y (Sem-V)**  
**Examination March / April – 2023**  
**Botany Paper- XV/ (Cell Biology & Molecular Biology)**

**[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 labelled diagrams wherever necessary.

Q1 Describe structure and function of nuclear 20**OR**

Write in detail structure and function of mANA and RNA.

Q2 What is chromosomal aberration? Add note on euploidy and aneuploidy 20**OR**

Write short note on (any four)

- a) Cell wall
- b) Lysosome
- c) Cell cycle
- d) Nucleotide
- e) Nucleosome
- f) Lampbrush chromosome

Q3 Multiple choice question 10

- 1) The fluid mosaic model of plasma membrane was proposed by \_\_\_\_\_
  - a) Singer and Nicolson
  - b) Davson and Danielli
  - c) Singer and Davson
  - d) Gorter and Grendel

- 2) Secondary lysosomes are produced by fusion of \_\_\_\_\_
  - a) Phagosome and pinosome
  - b) Phagosome and primary lysosome
  - c) Phagosome and Golgi apparatus
  - d) Pinosome and Golgi apparatus
- 3) The size of the nucleus depends on \_\_\_\_\_
  - a) The size of the cytoplasm
  - b) The size of the organism
  - c) The chromosome number of the cell
  - d) All of these
- 4) Which of the following enzymes is useful in unwinding of DNA during replication?
  - a) DNA polymerase
  - b) Helicase
  - c) DNA ligase
  - d) Endonuclease
- 5) In meiosis, crossing over takes place in which of the following phases?
  - a) Leptotene
  - b) Pachytene
  - c) Zygotene
  - d) Diplotene
- 6) Nuclear DNA replicates in which of the following phases of the cell cycle?
  - a) G1 phase
  - b) G2 phase
  - c) M phase
  - d) S phase

- 7) In plant cell DNA is present in \_\_\_\_\_
- a) Nuclear only
  - b) Nuclear, mitochondria and chloroplast
  - c) Nuclear and lysosome
  - d) Nuclear and vacuole
- 8) Which of the following is condition of trisomy in human?
- a)  $2n + 2$
  - b)  $2n-2$
  - c)  $2n+1$
  - d)  $2n$
- 9) Cri du chat is caused due to \_\_\_\_\_ in chromosome
- a) Deletion
  - b) Duplication
  - c) Translocation
  - d) All of the above
- 10) Polytene chromosome was first reported by \_\_\_\_\_
- a) Robert Brown
  - b) Mendel
  - c) Linber
  - d) E.G Balbiani

Total No. of Printed Pages: 02

**SUBJECT CODE NO: -Y-2042**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y (Sem-V)**  
**Examination March / April - 2023**  
**Elective Paper Botany Paper- XVI / Diversity of Angiosperms - I**

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

- N. B
- 1) Attempt all the questions
  - 2) Draw well labelled and neat diagram whenever necessary.

Q1 What is biodiversity? Write in details types of biodiversity. 20

**OR**

Explain in detail cropland and agricultural diversity.

Q2 Describe in detail family Brassica cease into floral formula and floral diagram. 20

**OR**

White short notes on (any four)

- a) Paleoendemism
- b) Ex situ
- c) Salient feature of Bentham and hooker system.
- d) Economic importance of Apiaceae
- e) Linnaeus system
- f) Key characters of Nymphaeaceae

Q3 Multiple choice question 10

- 1) Sanjay Gandhi National park is located in
  - a) West Bengal
  - b) Maharashtra
  - c) Gujarat
  - d) Bihar
- 2) Kaas Pathar is the flower plateru is located in
  - a) Kutch
  - b) Eastern ghats
  - c) Western ghats
  - d) Eastern Himalayas.
- 3) The term hot spot is coined by
  - a) Robert Hook
  - b) Hutchinson
  - c) Bentham
  - d) Muller
- 4) Different example of rice verities is the example of \_\_\_\_\_type of biodiversity.
  - a) Species diversity
  - b) Ecological diversity
  - c) Genetic diversity
  - d) cropland diversity

- 5) \_\_\_\_\_ genes belongs to family Magnoliales
  - a) Closure
  - b) affairs
  - c) Michelin
  - d) Nelumbo
- 6) Common character of inflorescence in alpacas is
  - a) Ramose
  - b) solitary
  - c) umbel
  - d) none of these
- 7) Papaveraceae family is also known as
  - a) Gourd family
  - b) cucumber family
  - c) roppy family
  - d) none of these
- 8) Pepo fruit is commonly seen in
  - a) Magnoliaceae
  - b) combretaceae
  - c) Nymphaeaceae
  - d) cucurbitaceae
- 9) Terminalia arjuna belongs to family
  - a) Papaveraceae
  - b) Rhamnaceae
  - c) lythraceae
  - d) combretaceae
- 10) Cremocarp fruit is characteristic feature of \_\_\_\_\_ family
  - a) Apiaceae
  - b) Rutaceae
  - c) capparidaceae
  - d) none of these

Total No. of Printed Pages: 2

**SUBJECT CODE NO: - Y-2056**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y Sem-VI**  
**Examination March / April - 2023**  
**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

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

Q1 Describe interaction of genes. Explain in detail dominant epistatic genes or dominant epistasis? 20

OR

Describe in detail sex determination and mechanism of sex determination in man and Drosophila?

Q2 What is genetic engineering? Describe in detail techniques of genetic engineering 20

OR

Write short notes on any four

- a) Test cross
- b) Holandric genes
- c) Law of dominance
- d) Phenylketonuria
- e) Gene cloning
- f) Introduction of G.J.Mendel

Q3 Multiple choice question 10

- 1) Law of segregation is also called as -----
  - a) Law of dominance
  - b) Back cross
  - c) Test cross
  - d) Law of purity of gameles
- 2) Unit of inheritance is called -----
  - a) Genotype
  - b) phenotype
  - c) gene
  - d) chromosome
- 3) A cross between  $F_1$  individuals with either of its parents is called -----
  - a) Recessive
  - b) Back cross
  - c) Dominant
  - d) None of these
- 4) Sex determination in birds is of -----type
  - a) xx-yy
  - b) xx-xo
  - c) zz-zw
  - d) None of these

- 5) Haemophilic male if marries with normal female gives birth to all -----sons.  
a) Normal b) Haemophilic c) carrier d) both a and c
- 6) Genetic diseases occurs due to ----genes.  
a) Dominant b) recessive c) complementary d) supplementary
- 7) In Drosophila ---eye colour is a mutant character  
a) Red b) white c) Blue d) none of these
- 8) ----enzymes are useful to join the cut ends of DNA molecule  
a) RNA polymerase b) Ligase c) DNA polymerase d) All of these
- 9) Restriction enzymes were discovered by -----  
a) Watson and crick b) Paul Berg c) Beedle and Tatum d) Nathan Arber
- 10) The most common plasmid vector used in genetic engineering is -----  
a)  $P^{BR325}$  b)  $P^{BR322}$  c)  $P^{BR328}$  d) None of these

Total No. of Printed Pages: 02

**SUBJECT CODE NO: - Y-2057**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y Sem-VI**  
**Examination March / April - 2023**  
**Botany Paper- XX 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 labelled Diagrams whenever necessary.

Q1 Describe botanical garden and add a note on its importance. 20

**OR**

Give in details origin and evolution of angiosperm. Add a note on Caytoniales theory 20

Q2 Describe in details family commelinaceae up to floral formula & floral diagramme. Add a note on economic importance of any two plants. 20

**OR**

Write a short not on (Any four) 20

- a. Herbaria
- b. Numerical Taxonomy
- c. Floral characterise and –floral formula of family Amaranthaceous
- d. Economic importance of family oleaceae
- e. Merits and Demerits TakthaJan's system of classification.
- f. Floral characters of family Asclepiadance

Q3 Multiple choice Question 10

1. The famous botanical garden of kew is located in  
 a. India      b. England      c. Germany      d. France
2. What is used for drying plant specimens  
 a. Filter paper      b. Blotting paper      c. Parchment paper      d. What's men's paper
3. Families of flowering plants was written by \_\_\_\_  
 a. Linnaeus      b. Bentham & Hooker      c. Hutchinson      d. Bessey
4. The basic unit of Classification is \_\_\_\_  
 a. Genus      b. family      c. species      d. order
5. Inflorescence in family Euphorbiaceous is \_\_\_\_  
 a. Umbel      b. Cyuthium      c. Catkin      d. Spike
6. Leaves of family Liliaceae is \_\_\_\_  
 a. Compound      b. Rudical      c. Reticulate      d. none

7. The specimen or element designated by author as nomenclatural type is \_\_\_\_\_
  - a. Holotype
  - b. Isotype
  - c. Lectotype
  - d. Neotype
8. *Lantana camara* is an example of family \_\_\_\_\_
  - a. Verbenaceae
  - b. Liliaceae
  - c. Asclepiadaceae
  - d. Amaranthaceae
9. Who is author of flora of marathwada \_\_\_\_\_
  - a. M.Sanjappa
  - b. V. N. Naik
  - c. D. Karthikeyan
  - d. D. Laxminarsimphan
10. *Digitalis purpurea* is an example of family.
  - a. Verbenaceae
  - b. Liliaceae
  - c. Asclepiadaceae
  - d. Scrophulariaceae