R7686	Sub. Code
	525101

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Botany

PLANT DIVERSITY — I (PHYCOLOGY, MYCOLOGY, LICHENOLOGY AND BRYOLOGY)

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. Which one of the following is a colonial algae?

   (a) Ulothrix (b) Spirogyra

   (c) Volvox (d) Cholrella

2. Mannitol is a reserved food found in

   (a) Gracillaria (b) Porphyra

   (c) Chara (d) Fucus

3. Which of the following contains chlorophyll a, b, phycoerythrin and phycocyanin

   (a) Chlorophyta (b) Phaeophyta

   (c) Rhodophyta (d) Bacillariophyta

4. Which one of the following has non-flagellated isogamous gametes?

   (a) Spirogyra (b) Chlamydomonas

   (c) Volvox (d) Fucus

5. Among the Fungi ———————— are the economically most useful group

(a) Basidiomycetes (b) Zygomycetes

(c) Ascomycetes (d) Deuteromycetes

6. Which one of the following is known as hat thrower fungus?

(a) Agaricus (b) Peziza

(c) Penicillium (d) Pilobolus

7. In sexual reproduction, the fruiting body formed is of

(a) Apothecium (b) Peritheciurn

(c) Both (a) and (b) (d) None of these

8. Asexual reproduction in lichen takes place by formation of

(a) Zygospores (b) Aplanospores

(c) Pycnidiospores (d) Chlamydospores

9. The Characteristics 'gemma cup' are present in

(a) Riccia (b) Marchantia

(c) Pellia (d) Anthoceros

10. Elaters are present in capsule of

(a) Marchantia (b) Riccia

(c) Funaria (d) None of these

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) List out the differences between Prokaryotic and Eukaryotic cells.

Or

(b) Briefly discuss about the phylogeny of Algae.

12. (a) Write briefly about the life cycle of cynaophycophyta with suitable examples.

Or

(b) Discuss in brief : The lifecycle of Charophyta.

13. (a) Write about the economic importance of Fungi.

Or

(b) Briefly explain about the reproduction and lifecycle of Mastigomycotina.

14. (a) With suitable diagrams write about the thallus organization in Lichens.

Or

(b) Briefly discuss about the inter-relationship in Lichens.

15. (a) Write about the development of sporophyte in marchantiales.

Or

(b) Write about the structure of sporophyte in Anthocerotales.

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

16. Write about the classification of Algae.

17. Write in detail about the life cycle of Rhodophycophyta.

18. Discuss in detail about the economic importance of Algae.

19. Give the classification of Fungi.

20. Write about the classification of Lichens.

21. Give the classification of Bryophytes.

22. Discuss about the economic importance of Lichens.

23. Write about the economic importance of Bryophytes.

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R7687	Sub. Code
	525102

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Botany

PLANT DIVERSITY-II PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. Phylogeny refers to ————————.

   (a) Genotype

   (b) Phenotype

   (c) Evolutionary history

   (d) Atavism

2. Sporangiophore is found in ————————.

   (a) *Psilotum*

   (b) *Lycopodium*

   (c) *Isoetes*

   (d) *Equisetum*

3. The development of sporangium from single initial is called ————————.

(a) Leptosporangiate

(b) Eusporangiate

(c) Monosporangiate

(d) Homosporangiate

4. A medullated protostele is also called as ————————.

(a) Actinostele

(b) Siphonostele

(c) Mixed protostele

(d) Dictyostele

5. The Tallest Gymnosperm is ————————.

(a) Pinus (b) Ginkgo

(c) Sequoia (d) Ephedra

6. ———————— is a living fossil.

(a) Ephedra (b) Pinus

(c) Cycas (d) Ginkgo

7. ———————— seeds are used as food.

(a) *Pinus wallichiana*

(b) *Pinus roxburghii*

(c) *Pinus insularis*

(d) *Pinus gerardiana*

8. The development of embryo in gymnosperm is ————————.

(a) Meroblastic (b) holoblastic

(c) endoblastic (d) viviparous

9. Infiltration of plant material with magnesium salt and made into a fossil is called ————————.

(a) Impression (b) Petrifaction

(c) Cast (d) Coal

10. While measuring the age of the fossil in uranium method the radioactive uranium measured is ————————.

(a) U_{206} (b) U_{234}

(c) U_{235} (d) U_{236}

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Give a short account on PPG-I classification of Pteridophytes.

Or

(b) Describe the strobilus of Sphenophytes.

12. (a) Narrate the evolution of sorus in pteridophytes.

Or

(b) Explain heterospory as a prerequisite character for the seed habit.

13. (a) Out line K. R. Sporne's (1965) classification of gymnosperms.

Or

(b) Write short notes on the origin of gymnosperms.

14. (a) Enlist the similarities and difference between the ovules of cycadales and ginkgoales.

Or

(b) Compare the ovules of Ephedrales and Gnetales.

15. (a) Write a short account on geological time scale.

Or

(b) What are the different methods used in the determination of age of the fossils.

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

16. Write an elaborate account on the phylogeny of pteridophytes.

17. List out the economic importance of pteridophytes.

18. Discuss the general characters of gymnosperms.

19. Write an essay on the economic importance of gymnosperms.

20. Explain various types of fossils and methods of fossilization.

21. Differentiate homosporous life cycle from heterosporous life cycle with suitable example.

22. Describe the evolution of steles in Pteridopytes.

23. Distinguish different types of ovules in Gymnosperms.

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R7688	Sub. Code
	525103

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Botany

MICROBIOLOGY AND PLANT PATHOLOGY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. Which microorganism among the following perform photosynthesis by utilizing light

   (a) Fungi (b) Viruses

   (c) Cyanobacteria (d) None of these

2. The association of endotoxin in gram negative bacteria is due to the presence of

   (a) Steroids

   (b) Peptidoglycan

   (c) Lipopolysaccharides

   (d) Polypeptide

3. The protein coat of viruses that enclose the genetic material is called

   (a) Virion (b) Capsid

   (c) Peplomers (d) Capsomers

4. Which of the following is the largest virus?
   (a) Megavirus chilensis
   (b) Arbo virus
   (c) Herpes virus
   (d) Mumps virus

5. Which of the following is the source of Vitamin A
   (a) Sterptococcus
   (b) Rhodotorula gracilis
   (c) Yeast
   (d) both (a) and (b)

6. Zymase is obtained from
   (a) Saccharomyces ludwigi
   (b) Cerevisae
   (c) Boulardii
   (d) None of these

7. The Teleomorphic stage of Cercospora is
   (a) Glomorella
   (b) Cochliobolus
   (c) Mycospaherella
   (d) Pleospora

8. Parasexuality was first discovered by
   (a) Ponecarvo
   (b) Erikson
   (c) De Bary
   (d) Robert Koch

9. Blotter test is used in

(a) Seed health testing

(b) Seed viability

(c) Seed purity test

(d) Seed rate

10. Hyperplasia refers to

(a) Increased cell division

(b) Cell death

(c) Cell enlargement

(d) Decreased cell division

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Briefly discuss about the spontaneous generation theory.

Or

(b) What is Biogenesis theory? Give its features.

12. (a) Give the Characteristics of viruses based on host.

Or

(b) Write the characters of viruses based on Genetic material.

13. (a) Bring out the methodology of vinegar production in Industries.

Or

(b) What do you mean by food spoilage? Give the preservation methods.

14. (a) Write about the principle and epidemiology of plant pathology.

Or

(b) Bring out the importance of Biological control in pest management.

15. (a) What are the diseases caused by Mycoplasma?

Or

(b) List out the symptoms and control measures of infection by Pytoplasma.

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

16. Write in detail about the Bergey's classification of Bacteria.

17. Write an essay on General characteristics of Bacteria.

18. Discuss the structure and characteristics of TMV and CaMV.

19. Give the General characters of Viroids and the diseases caused by them.

20. Write an essay on Bioleaching and Sewage treatment.

21. Bring out the role of environment and host nutrition on Plant diseases.

22. List out the National and International quarantine legislations. Discuss.

23. Give in detail about the disease Red rot of Sugarcane.

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R7689	Sub. Code
	525104

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Botany

CELL BIOLOGY, GENETICS AND PLANT BREEDING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. The organelle involved in apoptosis is _____.

   (a) Lysosome (b) Endoplasmic reticulum

   (c) Golgi apparatus (d) Mitochondria

2. The distribution of intrinsic proteins in the plasma membrane is _____.

   (a) Random (b) Symmetrical

   (c) Asymmetrical (d) All the above

3. The function of centrosome is _____.

   (a) Protein synthesis (b) Osmoregulation

   (c) Signalling (d) Formation of spindle fibre

4. The synopsis between the non-sister chromatids of a homologous chromosome takes place during

   (a) Leptotene (b) Pachytene

   (c) Zygotene (d) Diplotene

5. The law of independent assortment takes about _____.

(a) Allelic interaction of genes

(b) Non - Allelic interaction of genes

(c) Homologous chromosomes

(d) Autosomes

6. The complete masking of expression of a gene by another allelic gene is called _____.

(a) Dominance (b) Co-dominance

(c) Epistasis (d) Complementary interaction

7. Crossing over takes place in _____ stage.

(a) Leptotene (b) Pachytene

(c) Zygotene (d) Diplotene

8. Which of the following is a classical example of point mutation?

(a) Phenylketonuria (b) Sickle cell anemia

(c) Thalassemia (d) Haemophilia

9. Which of the following is the most effective chemical mutagen?

(a) Methane

(b) Guanine

(c) Carbon tetrasulphide

(d) Caffeine

10. Pure line refers to _____.

(a) Heterozygosity only

(b) Homozygosity only

(c) Homozygosity and self assortment

(d) Heterozygosity and linkage

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Describe the structure and functions of Mitochondria.

Or

(b) Explain the structure and functions of Endoplasmic reticulum.

12. (a) Discuss the structure of giant chromosomes.

Or

(b) Give a short account on apoptosis.

13. (a) Narrate the Contributions of mendel to the field of genetics.

Or

(b) What is incomplete dominance? Explain with Suitable example.

14. (a) Explain the mechanism of crossing over and its importance.

Or

(b) What are the various types of mutations?

15. (a) Discuss about the genetic basis of heterosis.

Or

(b) Write short notes on mutational breeding.

Part C (5 × 8 = 40)

Answer any **five** questions.

16. Discuss the structure and functions of nucleus.

17. Write an essay on cell signalling and signal transduction.

18. Explain complementary interaction of genes with suitable example.

19. Define the concept of linkage with maize.

20. What are various methods of selection of crops and explain its merits and demerits?

21. Give a detailed account on the Structure and functions of membrane bound organelles.

22. Describe recessive epistasis with suitable example.

23. Enlist the role of polyploids in crop improvement

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R7690	Sub. Code
	525501

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022.

First Semester

Botany

ECONOMIC BOTANY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. Major food crops of the world belongs to the family

   (a) Leguminosae (b) Solanaceae

   (c) Cruciferae (d) Gramineae

2. The plant with great medicinal value

   (a) *Brassica oleraceae*

   (b) *Rauwolfia serpentine*

   (c) *Coffea robusta*

   (d) *Cryptostegia grandiflora*

3. Fibre of great commercial importance derived from epidermis is

   (a) Flax (b) Hemp

   (c) Coir (d) Cotton

4. A milk like preparation can be made from the seeds of

(a) Gram (b) Grapes

(c) Soybean (d) Barley

5. Saffron is produced from

(a) *Indigofera roots* (b) Rosa petals

(c) *Hibiscus* stamens (d) *Crocus* style and stigma

6. The _____ is the source of rubber.

(a) *Hevea brasilensis* (b) *Tectona grandis*

(c) *Cedrus depdara* (d) *Michelia champaca*

7. Which of the most important source of food and fodder?

(a) Algae (b) Fungi

(c) Lichen (d) Cereal

8. The plant with rich variety of timber _____.

(a) *Cassia fistula* (b) *Dalbergia sissoo*

(c) *Acacia arabica* (d) *Morus alba*

9. The chicory mixed with coffee is obtained from

(a) Seeds (b) Leaves

(c) Roots (d) Stems

10. The flax fibre is obtained from

(a) *Cannabis sativa* (b) *Crotolaria juncea*

(c) *Cocos nucifera* (d) *Linum usitatissimum*

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Write about origin of cultivated plants.

Or

(b) Briefly write about domesticated plants.

12. (a) Give the economic importance of vegetables - Potato, Onion, Brinjal, Tomato.

Or

(b) Give the Botanical description of Citrus fruit.

13. (a) Write the role of Ginger in Spices.

Or

(b) Why spices are important in Food and Medicine?

14. (a) Write down the morphology of Mahogany.

Or

(b) Give about the importance of Cotton.

15. (a) Brief about the botanical description of Sunflower.

Or

(b) What is Guduchi? Write about it.

Part C (5 × 8 = 40)

Answer any **five** questions.

16. Write in detail about the botanical description and uses of Millets.

17. Give in detail the Botanical description and uses of Cereals.

18. Give the origin and history of Fruits Mango and Jack fruit.

19. Why vegetables are important to Humans? Write its nutritional values.

20. Write an essay on Beverage Plants.

21. Which country is the major exporter of Spices? Give its values.

22. Write down the economic importance of Timbers.

23. Why oil is an important food product? List out its nutritional values.

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