PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Critically examine the role of light as a climatic factor.

Or

(b) Draw the Nitrogen Cycle.

17. (a) Discuss, in detail, the morphological and anatomical adaptations of hydrophytes.

Or

(b) Examine the anatomical and physiological adaptations of xerophytes.

18. (a) Discuss, in detail, the process of plant succession.

Or

(b) How will you measure the vegetation by Quadrat method?

19. (a) Discuss, in detail, the phytoremediation.

Or

(b) Write an essay on bio indicators.

20. (a) What is mean by continental drift? How it is relevant in phytogeography?

Or

(b) Bring out the vegetation types of Tamil Nadu.

Reg. No. : .....

Code No. : 30371 E **Sub. Code : AEB 051**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Botany — Core

Major Elective – I — PLANT ECOLOGY AND PHYTOGEOGRAPHY

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Plants growing under direct sunlight are known as
   (a) Heliophytes
   (b) Sciophytes
   (c) Psamophytes
   (d) Pyrophytes

2. A mutual relationship between two organisms, where both of them are benefitting from watching the other is Called
   (a) Mutualism (b) Symbiosis
   (c) Parasitism (d) Predator

3. The mass of living material at a trophic level at a particular time is called

(a) Standing rate (b) Standing plant
(c) Standing crop (d) Standing state

4. Where you come across root pockets?

(a) Xerophytes (b) Halophytes
(c) Hydrophytes (d) Mesophytes

5. A biological community together with the associated abiotic environment is

(a) Biomes (b) Population
(c) Community (d) Ecosystem

6. In ecological succession, the intermediate developmental phase is known as

(a) ecesis (b) climax
(c) nudation (d) sere

7. Which bioremediation approach involves mixing contaminated soil with water, carbon dioxide and fertilizers in a bioreactor to stimulate biodegradation?

(a) In situ hybridization
(b) Slurry-phase bioremediation
(c) Biopile treatment
(d) Ex situ bioremediation

8. Which among the following group of plants is a good indicator of air pollution?

(a) Lichens (b) Bryophyte
(c) Pteridophyte (d) Gymnosperms

9. The plant which has restricted distribution to a particular locality is called?

(a) Epidemic (b) Endemic
(c) Rare (d) Endangered

10. Littoral swamp forests are present in Tamil Nadu in

(a) Nilgiris (b) Thanjavur
(c) Thiruvannamalai (d) Tenkasi

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain wind as a factor.

Or

(b) Describe the role of microbes in the environment.

12. (a) List down the components of the ecosystem.

Or

(b) Classify the ecosystem.

13. (a) Explain the concept of community.

Or

(b) Expound the terms plant formation and association.

14. (a) Give an account of biomonitoring.

Or

(b) Highlight the importance of biosensors in monitoring environmental pollution.

15. (a) Explain the principles of phytogeography.

Or

(b) Describe the phenomenon of endemism.

PART C — (5 × 8 = 40 marks)

ver ALL questions, choosing either (a) or (b).

ach answer should not exceed 600 words.

Describe Phloem tissues with suitable diagrams.

Or

Explain the theories of Meristems.

Compare the internal morphology of monocot leaves with dicot leaves.

Or

Write an essay on Dicot stem with sketch.

Describe the various stages of secondary thickening of dicot root.

Or

Explain the stages of anomalous secondary growth of *Dracaena*.

Elaborate the types of nodes with diagrams.

Or

What are the epidermal tissues? Explain its types.

Describe various steps in double staining.

Or

Enlist the scope and importance of Microscopy.

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Reg. No. :.....

Code No. : 10736 E **Sub. Code : AMBO 21 / CMBO 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2022.

Second Semester

Botany — Core

PLANT ANATOMY AND MICRO TECHNIQUES

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one is a water conducting tissue?
   (a) Xylem (b) Pholem
   (c) Collenchyma (d) Sclerenchyma

2. Meristematic tissue is a _____ tissue.
   (a) Conducting (b) Permanent
   (c) Temporary (d) Secretory

3. Casparian bands are seen in _____
   (a) Epidermis (b) Endodermis
   (c) Pericycle (d) Phloem

4. Open vascular bundles are seen in _____

(a) Dicot stem (b) Dicot root

(c) Monocot stem (d) Monocot root

5. How many numbers of protoxylem or phloem bundles are present in dictor root?

(a) 2 to 9 (b) 1 to 5

(c) 2 to 6 (d) 2 to 8

6. Abnormal/anomalous secondary growth occurs in

(a) Boerhaavia (b) Ginger

(c) Wheat (d) Sunflower

7. Trilacunar node is present in

(a) Aralia (b) Azadirachta

(c) Justicia (d) Pongamia

8. The space found above the leaf trace is

(a) Leaf gap (b) Lacuna

(c) Pit (d) Pit membrane

9. Photograph which is taken from microscope is known as

(a) Macrograph (b) Monograph

(c) Micrograph (d) Pictograph

10. Which of the following is an azodye?

(a) Safranin (b) Haematoxylin

(c) Aniline blue (d) Orange G

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define Meristems. Give short notes on its types.

Or

(b) Explain in brief about simple tissues.

12. (a) Illustrate the structure of dicot Root.

Or

(b) Illustrate the internal morphology of dorsiventral leaf.

13. (a) Illustrate the normal secondary growth of dictor stem.

Or

(b) How does anomalous secondary growth takes place in Boerhaavia?

14. (a) Explain in brief about Hairs.

Or

(b) Write short notes on stomatal types.

15. (a) Explain the principle and working mechanism of simple microscope.

Or

(b) How do you prepare sample for permanent slide?

(6 pages)

Reg. No. : .....

Code No. : 30367 E **Sub. Code : AMBO 41**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Botany — Core

PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Circinate venation is found in ———— plants.
   (a) Gymnosperms (b) Algae
   (c) Bryophytes (d) Pteridophytes

2. *Lycopodium* is commonly known as
   (a) Club Moss (b) *Bogg Moss*
   (c) Reindeer Moss (d) Irish Moss

3. Formation of sporophyte from gametophyte is
   (a) Apogamy (b) Apomixis
   (c) Apocarpy (d) Apospory

4. Which one of the following is the correct taxonomic Hierarchy?
   (a) Division, class, series, order and family
   (b) Division, order, class, series and family
   (c) Order, division, class, series and family
   (d) Series, order, division, class and family

5. Seed Habit originated from
   (a) Algae (b) Fungi
   (c) Bryophytes (d) Pteridophytes

6. In Gymnosperms pollination is exclusively by
   (a) Water (b) Insects
   (c) Animals (d) Wind

7. Pinus endosperm is
   (a) Tetraploid (b) Triploid
   (c) Diploid (d) Haploid

8. Resin and turpentine is obtained from
   (a) Cedrus (b) Pinus
   (c) Gnetum (d) Cycas

9. Fossil beehives is the name associated with ———— fossil.
   (a) Cycads (b) Coniferales
   (c) Pteridophytes (d) Ginkgoales

10. Jurassic period is about
    (a) 265 million years back
    (b) 165 million years back
    (c) 65 million years back
    (d) 365 million years back

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write short notes on synangium of *Psilotum*.

    Or

    (b) Highlight the general characteristics of Pteridophytes.

12. (a) Bring the general characters and systematic position of *Adiantum*.

    Or

    (b) Give an account of internal structure of *Selaginella* leaf.

13. (a) Classify gymnosperms.

    Or

    (b) Write about the external structure of *Pinus*.

14. (a) Write short notes on economic importance of *Gnetum*.

    Or

    (b) Enumerate the economic importance of gymnosperms.

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

    Or

    (b) Briefly state the importance of fossils.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Describe the gametophyte of *Psilotum* with suitable diagrams.

Or

(b) Illustrate the life history of *Lycopodium*.

17. (a) Describe the life cycle of *Selaginella*.

Or

(b) Give a detailed account on life cycle of *Adiantum*.

18. (a) Explain the general characteristics of Gymnosperms.

Or

(b) Write an essay on the male and female cones of *Pinus*.

19. (a) Illustrate the life cycle of *Gnetum*.

Or

(b) Discuss the angiospermic features of *Gnetum*.

20. (a) Illustrate the structure of the sporophyte of *Rhynia* major.

Or

(b) Name the different species of *Lepidodendron*. Draw and describe the structure of its leaf and stem anatomy.

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Reg. No. : .....

...de **No. : 10738 E** **Sub. Code : AMBO 41**

...CBCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Botany — Core

TERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY

...For those who joined in July 2020 onwards)

...Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

...hoose the correct answer :

...ost primitive living vascular plants are

...) Bryophytes (b) Pteridophytes

...) Gymnosperms (d) Angiosperms

...eed habit originated in

...) Algae (b) Fungi

...) Pteridophytes (d) Bryophytes

...aper is obtained from

...) *Pinus* (b) *Picea*

...) *Larix* (d) All the above

...ossils are found in ————

...) Igneous rocks (b) Quartz

...) Soil (d) Sedimentary rocks

...Which one is a extinct vascular cryptogam?

...) *Rhynia* (b) *Psilotum*

...) *Gnetum* (d) *Pinus*

PART B — (5 × 5 = 25 marks)

...swer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

...) Enumerate the general characters of Pteridophytes.

Or

...) Illustrate the synangium of *Psilotum*.

3. Which one is commonly known as walking fern?

(a) *Adiantum* (b) *Selaginella*

(c) *Lycopodium* (d) *Psilotum*

4. The first land inhabitant plants are

(a) Bryophytes (b) Pteridophytes

(c) Gymnosperms (d) Angiosperms

5. Xylem vessels are absent in

(a) Algae (b) Fungi

(c) Gymnosperms (d) Angiosperms

6. Roots of *Pinus* seedlings are associated with

(a) Bacteria (b) Viruses

(c) Algae (d) Fungi

7. Smallest gymnosperm is

(a) *Sellaginella* (b) *Cycas*

(c) *Zamia* (d) *Genetun*

12. (a) Give an account on *Selaginella*.

Or

(b) Write a short note on reproduction takes place in adiantum.

13. (a) Illustrate the internal structure of *Pinus* root.

Or

(b) List out the general characteristics of Gymnosperms.

14. (a) Explain the systematic position and various species of *Gnetum*.

Or

(b) Explain the brief about internal structure of *Gnetum* stem.

15. (a) Write short notes on applications of fossil study in Botany.

Or

(b) Draw and describe the structure of young stem of *Lyginopteris*.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe Sporne classification of Pteridophytes.

Or

(b) Explain the detailed notes on reproduction of *Lycopodium*.

17. (a) Write an essay on Stelar evolution in Pteridophytes.

Or

(b) Illustrate the life cycle of *Selaginella* with suitable diagram.

18. (a) Write the outline of Gymnosperm classification.

Or

(b) Write an essay on the male and female cones of *Pinus*.

19. (a) *Gnetum* is considered as an advanced genus of gymnosperms – justify.

Or

(b) List out the economic importance of Gymnosperms.

20. (a) Write down the glimpses of geological time scale.

Or

(b) Define fossil. Describe the conditions favoring fossilization.

———————

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Examine the major events of cell cycle.

Or

(b) Describe the structure of prokaryotic plant cell.

17. (a) Explain the structure and functions of mitochondria.

Or

(b) Describe the structure and functions of Nucleus.

18. (a) Highlight the stages of Microsporogenesis.

Or

(b) With suitable illustration, explain the process of development of Female gametophyte.

19. (a) What is Endosperm? Explain its types with suitable diagrams.

Or

(b) Write an essay on structure of Dicot embryo.

20. (a) Write an essay on Parthenocarpy.

Or

(b) Write an essay on Polyembryony.

Reg. No. :.....

Code No. : 30368 E **Sub. Code : AMBO 51**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Botany — Core

CELL BIOLOGY AND EMBRYOLOGY OF ANGIOSPERMS

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Which one of the following is a biggest cell?

(a) Ostrich's egg (b) Hen' egg

(c) Human egg (d) Mycoplasm

2. Which of the following feature will help you in distinguishing a plant cell from an animal cell?

(a) Cell wall (b) Mitochondria

(c) Cell membrane (d) Nucleus

3. Which one of the following term is not a part of nucleus?
   (a) Plasma membrane (b) Chromosome
   (c) Nucleolus (d) Gene

4. Who discovered Nucleus?
   (a) Robert hook (b) Robert Brown
   (c) Plumming (d) Singer

5. Egg in female gametophyte is accompanied by
   (a) Antipodal cells (b) Synergids
   (c) Definitive nucleus (d) Tube nucleus

6. Female gametophyte in angiosperm is represented by
   (a) Ovule
   (b) Nucellus
   (c) Embryo sac
   (d) Megaspore mother cell

7. Double fertilization was discovered by
   (a) Schwann (b) Nawaschin
   (c) Nathans (d) Smith

8. Endosperm is a ———— tissue
   (a) Nutritive (b) Defense
   (c) Mechanical (d) Covering

9. Development of fruit without fertilization is called
   (a) Poly embryony (b) Apomixis
   (c) Apospory (d) Parthinocarpy

10. In which of the plant species, parthenocarpy takes place?
    (a) Mango (b) Banana
    (c) Peach (d) Jack fruit

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Outline the different phases of mitotic cell division.

    Or

    (b) Differentiate prokaryotic cell with Eukaryotic cell.

12. (a) Illustrate the structure of Chloroplast.

    Or

    (b) Ribosomes are protein factories – justify the statement.

13. (a) Explain the structure of Pollengrains.

    Or

    (b) What are the essential and accessory parts of Flower?

14. (a) Discuss about the structure of monocot embryo.

    Or

    (b) Give a short note on Double Fertilization.

15. (a) List out the significance of Apomixis.

    Or

    (b) What is Polyembryony? Add its types.

(6 pages) **Reg. No. : .....**

Code No. : 30369 E **Sub. Code : AMBO 52**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Botany – Core

MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct Answer

1. What is the fruit of wheat and rice called?
   (a) Follicle
   (b) Caryopsis
   (c) Siliqua
   (d) Achene

2. Roots are
   (a) Descending, Negatively geotropic, Positively phototropic
   (b) Descending positively geotropic, negatively phototropic
   (c) Ascending, positively geotropic, negatively phototropic
   (d) Ascending, negatively geotropic, positively phototropic

3. Which one of the following is the correct Taxonomic Hierarchy?
   (a) Division Class, Series, Order and Family
   (b) Division, Order, Class, Series, and Family
   (c) Order Division, Class, Series, and Family
   (d) Series, Order, Division, Class, and Family

4. Who is father of Binomial Nomenclature?
   (a) Engler and Prantle
   (b) Bentham and Hooker
   (c) Linnaeus
   (d) Hutchinson

5. Which one of the following plant is a climber?
   (a) *Catharanthus* (b) *Coccinia*
   (c) *Phyllanthus* (d) Coleus

6. Which part is edible in Tamarind?

(a) Epicarp (b) Mesocarp

(c) Endocarp (d) Both (a) and (b)

7. Which family Hesperidium fruit is seen?

(a) Annonaceae (b) Rutaceae

(c) Cucurbitaceae (d) Caesalpiniaceae

8. Botanical name of Coffee is

(a) *Nicotiana tabacum*

(b) *Thea sinensis*

(c) *Coffea arabica*

(d) *Theobroma cocco*

9. Poaceae belongs to

(a) Monocot

(b) Dicot

(c) Monochlamydeae

(d) Both (a) and (b)

10. Which one of the family has tepals?

(a) Euphorbiaceae (b) Cucurbitaceae

(c) Rutaceae (d) Rubiaceae

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain briefly about the modification of stems.

Or

(b) Explain the different types of Phyllotaxy.

12. (a) List out the demerits of phylogenetic system of classification.

Or

(b) Explain the outline of APG — IV System of Classification.

13. (a) Illustrate the floral characters of the family Caesalpiniaceae.

Or

(b) Write briefly the general characters of Apiaceae.

14. (a) Bring the economic importance of Rubiaceae.

Or

(b) Describe *Calotropis* flower and give its floral diagram.

15. (a) List out the importance of Euphorbiaceae.

Or

(b) Explain the structure of spikelet of grass with suitable diagram.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What are Inflorescences? Explain about its special types.

Or

(b) Write an essay on types of Fruits.

17. (a) Describe Bentham and Hooker Classification of plants.

Or

(b) What is binomial nomenclature? Add its Rules and regulations.

18. (a) Explain the general characteristics of the family Rutaceae.

Or

(b) Write briefly the economic importance of Cucurbitaceae.

19. (a) Illustrate the floral characteristics of Convolvulaceae,.

Or

(b) Explain the general characteristics of Lamiaceae with economic importance.

20. (a) Explain the economic importances of Poaceae.

Or

(b) Illustrate the floral characteristics of the family Arecaceae.

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(3 pages)

Reg. No. : .....

Code No. : 30370 E Sub. Code : AMBO 53

B.Sc.(CBCS) DEGREE EXAMINATION,
NOVEMBER 2021.

Fifth Semester

Botany — Core

BIOCHEMISTRY AND BIOINFORMATICS

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions, Choose the Correct Answer

The maximum number of hydrogen bonds that a molecule of water can have is

(a) 1 (b) 2

(c) 3 (d) 4

Rancidity of lipids of lipid-rich foodstuff is because of

(a) Reduction of fatty acids

(b) Hydrogenation of unsaturated fatty acids

(c) Dehydrogenation of saturated fatty acids

(d) Oxidation of fatty acids

The nature of an enzyme is

(a) Lipid (b) Vitamin

(c) Carbohydrate (d) Protein

The general mechanism is that an enzyme acts by:

(a) Reducing the activation energy

(b) Increasing activation energy

(c) Decreasing pH value

(d) Increasing the pH value

CPU comprises of

(a) ALU only (b) CU and OU

(c) ALU and CU (d) CU only

Identify the nucleic acid databases

(a) DDBJ (b) SWISSPROT

(c) PDP (d) PRF

2. Colorimeter works on the principle of

(a) Beer-Lambert's law

(b) Newton's Law

(c) Mendel's law

(d) Shelford's law

3. Which of the following Biomolecules simply refers to as "Staff of life"?

(a) Lipids (b) Proteins

(c) Vitamins (d) Carbohydrates

4. Which of the following is the general formula of Carbohydrates?

(a) $(C_4H_2O)n$ (b) $(C_6H_2O)n$

(c) $(CH_2O)n$ (d) $(C_2H_2O_2)n$ COOH

5. Which of the following statements is true about proteins?

(a) Proteins are polymers of glucose

(b) Proteins are polymers of amino acids

(c) Proteins are polymers of peptide bonds

(d) Proteins are polymers of disulfide bridges

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account of atoms.

Or

(b) Explain the principle of pH meter.

12. (a) Bring out the basic structure of carbohydrates.

Or

(b) What do you mean by isomerism? Explain with suitable example.

13. (a) Classify the proteins based on composition.

Or

(b) Expound the hydrolytic rancidity of lipids.

14. (a) How will you classify the enzymes?

Or

(b) List down the factors affecting enzyme action.

15. (a) Explain the organization of computers.

Or

(b) List down the websites used for browsing.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Discuss, in detail, the different kinds of chemical bonds.

Or

(b) Examine the principle, instrumentation and applications of Chromatography.

17. (a) Describe the structure and properties of Sucrose and Maltose.

Or

(b) Examine the structure and properties of monosaccharaides.

18. (a) Elucidate the four levels of structural organization of proteins.

Or

(b) Discuss, in detail, the physical properties of lipids.

19. (a) Decipher the mechanism of enzyme action.

Or

(b) Review the role of enzymes in industry.

20. (a) Write an essay on virtual library.

Or

(b) Examine the features of Protein sequence database.

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...pages) **Reg. No. :**.....

...ode No. : 10745 E **Sub. Code : ANBO 41**

...I. (CBCS) DEGREE EXAMINATION, APRIL 2022.

Fourth Semester

Botany

...Non Major Elective — FOOD AND NUTRITION

(For those who joined in July 2020 onwards)

...me : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Identify the protective food

(a) Carbohydrates
(b) Proteins
(c) Lipids
(d) Vitamins and Minerals

Scurvy is disease caused by the deficiency of

(a) Vitamin A (b) Vitamin C
(c) Vitamin B (d) Vitamin D

3. Caphyrins, a type of prolamine, is found in abundance in

(a) Paddy (b) Wheat
(c) Ragi (d) Sorghum

4. Which among the following in high in grapes?

(a) Copper (b) Magnesium
(c) Manganese (d) Selenium

5. Pickling is the technique of

(a) Addition of salt and chilly to the food
(b) Addition of sugar to the food
(c) Keeping of microbes away from the food
(d) Heating of foods

6. Squahses can be best prepared from

(a) Orange (b) Pine apple
(c) Banana (d) Grapes

7. Which among the following is not a food additive?

(a) Emulsifiers (b) Flavouring agents
(c) Salt (d) Foaming agents

Salmonellosis is a

(a) Disease
(b) Food poisoning complication
(c) Disorder
(d) Development

Which among the following is not associated with Fermentation Process?

(a) Ethanol (b) Lactic acid
(c) Carbon dioxide (d) Flavouring agents

Rum is produced from

(a) Grapes (b) Sugarcane juices
(c) Vegetables (d) Pulps

PART B — (5 × 5 = 25 marks)

...nswer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

(a) Explain the term balanced diet.

Or

(b) Analyse the term energy value.

12. (a) Bring out the nutritive value of Bengal gram and black gram.

Or

(b) Examine the nutritive value of mango and banana.

13. (a) Do you think that sugar can be used for food preservation? If so, explain.

Or

(b) How will you prepare jam?

14. (a) Give an account of food poisioning.

Or

(b) Describe any one simple test used to detect food adulteration.

15. (a) List down the types of fermentation.

Or

(b) Bring out the uses of fermentation.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) How will you prevent food deficiency diseases?

Or

(b) Classify the major types of food.

17. (a) Analyse the nutritive value of any two cereals that you have studied.

Or

(b) Bring out the importance of Brinjal and ladies finger as essential vegetable for human consumption.

18. (a) How will you prepare pickle?

Or

(b) How will you prepare squash?

19. (a) Analyse the types of food additives.

Or

(b) Write an essay on the harmful effects of food adulteration.

20. (a) Classify the beverages.

Or

(b) Critically examine the process of fermentation.

(6 pages) Reg. No. : .....

Code No. : 30379 E **Sub. Code : ANBO 41**

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fourth Semester

Botany

Non Major Elective — FOOD AND NUTRITION

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Vitamin A deficiency causes ————

(a) Anaemia (b) Night blindness

(c) Rickets (d) Bleeding gums

2. Maida is a product of

(a) Rice (b) Wheat

(c) Corn (d) Ragi

3. ———— is the king of fruits.

(a) Guava (b) Mango

(c) Grape (d) Pomegranate

4. Tomato is the good source of vitamin

(a) E (b) B6

(c) C (d) All the above

5. Sugar is used to preserve

(a) Vegetables (b) Fruits

(c) Cereals (d) Pulses

6. During the fermentation of pickle ———— acid is produced

(a) oxalic acid (b) ascorbic acid

(c) tartaric acid (d) lactic acid

7. Coffee is generally adulterants with ————

(a) Starch (b) Common salt

(c) Vanaspati (d) Chicory

8. ———— is a potential terrorist weapon.

(a) Clostridium (b) Bacillus

(c) Salmonella (d) Shigella

9. Fermentation is a _____ process.

(a) aerobic

(b) anaerobic

(c) both

(d) none of the above

10. What is the most common official state beverage?

(a) Milk (b) Coffee

(c) Wine (d) Beer

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account on symptoms of vitamin deficiencies.

Or

(b) What are the sources of fats and oils?

12. (a) List out the nutritive value of any two vegetables you have studied.

Or

(b) Explain the nutritive values of coconut.

13. (a) Describe the principles involved in food preservation.

Or

(b) Explain the usage of salt and sugar in food preservation.

14. (a) What are intentional adulterants? Explain the different types of adulterants.

Or

(b) What is salmoneltosis? What causes salmonellosis?

15. (a) Explain the role of fermentation in food processing.

Or

(b) Explain the types of beverages.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe how is nutritional deficiencies diagnosed and treated.

Or

(b) Discuss about various sources and requirements tes and mineral food.

17. (a) Describe the essential nutrients present in pulses and its importance towards human health.

Or

(b) Differentiate nuts from oil seeds. Explain their nutritive values with examples.

18. (a) Explain jelly preparation.

Or

(b) Explain jam preparation in detail.

19. (a) Define food additives. And explain its different types.

Or

(b) Bring out simple physical tests for detection of food adulterants.

20. (a) What are the types of fermentation? What are the various products of fermentation reaction?

Or

(b) Explain most popular beverages in the world.

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Reg. No. : .....

ode No. : 10593 E **Sub. Code : SNBO 4 B/ ANBO 42**

(CBCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Botany

Major Elective — BOTANY FOR COMPETITIVE EXAMINATION

(For those who joined in July 2017 onwards)

Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Who is father of botany?

(a) Linnaeus (b) Theophrastus

(c) Mendal (d) M.O.P Iyengar

Double fertilization is exhibited by

(a) Alage (b) Fungi

(c) Gymnosperms (d) Angiosperms

Photosynthesis is ———— process.

(a) Catabolic (b) Anabolic

(c) Amphibolic (d) All

Synthetic seed is produced by encapsulating somatic embryo with

(a) Sodium chloride (b) Sodium alginate

(c) Sodium acetate (d) Sodium nitrate

Plant tissue culture technique is a redefined nethod of

a) Hybridization

b) Vegetative propagation

c) Asexual reproduction

d) Selection

PART B — (5 × 5 = 25 marks)

swer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

a) What are algae? Give short notes on characteristic features of algae.

Or

b) List out the economic importance of fungi.

3. Which one is a natural system of classification?

(a) Bentham and Hooker

(b) Engler and Prantle

(c) Hutchinson

(d) All

4. Binomial nomenclature was introduced by

(a) Linnaeus (b) Mendal

(c) Bentham (d) Hooker

5. Bitter plant is ————

(a) *Acalypha indica*

(b) *Andrographis paniculata*

(c) *Solanum trilobatum*

(d) *Ocimum sanctum*

6. *Phyllanthus emblica* belongs to ———— family.

(a) Euphorbiaceae (b) Poaceae

(c) Fabaceae (d) Cucurbitaceae

7. Root pressure is developed in ————

(a) Xylem (b) Phloem

(c) Cortex (d) *Pericycle*

12. (a) Differentiate natural and phylogenetic system of classification.

Or

(b) List out economic importance of members of fabaceae.

13. (a) List out the medicinal uses of *Acalypha indica*.

Or

(b) Write short notes on Azadiractin.

14. (a) Write short notes on chloroplast with sketch.

Or

(b) Write an account of active absorption of water.

15. (a) What are recombinants? How do you identify those recombinants?

Or

(b) Give an account on Biofertilizers.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Enumerate the economic importance of algae.

Or

(b) List out the general characters of pteridophytes.

17. (a) Discuss in detail on international code of botanical nomenclature.

Or

(b) Point out the economic importance of the family poaceae.

18. (a) Tabulate any ten uses of amal.

Or

(b) Enumerate the economic importance of *Andrographis paniculata.*

19. (a) Describe the mechanism of opening and closing of stomata.

Or

(b) Differentiate between cyclic and non-cyclic photophosphorylation.

20. (a) Describe restriction endonucleases.

Or

(b) Enlist the scope and importance of plant tissue culture.

———————

(6 pages)

Reg. No. : .....

Code No. : 30373 E **Sub. Code : ASBO 31**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Botany

Skill – Based Core — MUSHROOM CULTURE TECHNOLOGY

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What type of climate is suitable for mushroom cultivation?

   (a) Sunny (b) Rainy

   (c) Humid (d) Winter

2. Which among the following is popularly called the milky mushroom?

   (a) *Pleurotus Sajor - caju*

   (b) *Pleurotus citrinopileatus*

   (c) *Calocybe indica*

   (d) *Agaricus bisporus*

3. Mushroom cap like structure is known as

   (a) Pileus (b) Mycelia

   (c) Fruiting body (d) Umbrella cap

4. Mother spawn is normally prepared using

   (a) Sorghum grains (b) Wheat grains

   (c) Maize grains (d) Paddy

5. When young fruiting body is completely enveloped by a thin membrane, it is called

   (a) Mycelium (b) Rhizoids

   (c) Velum (d) Rhizines

6. Fleshy stalk of the basidocarp is called

   (a) Hyphae (b) Stipe

   (c) Annulus (d) Seta

7. Which among the following is a bacterial disease of mushrooms?

(a) Wet bubble disease

(b) Dry bubble disease

(c) Cob web disease

(d) Biotech

8. Identify the mineral that is found in higher quantity in mushrooms

(a) Potassium (b) Aluminium

(c) Zinc (d) Chromium

9. Average fruiting body weight of button mushroom is

(a) 12g (b) 4g

(c) 34g (d) 50g

10. Which among the following is a method of short term storage of mushroom?

(a) Canning (b) Refrigeration

(c) Brining (d) Pickling

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Highlight the medicinal values of mushrooms.

Or

(b) Explain the cultivation of *Agaricus*.

12. (a) Highlight any two sterilization methods.

Or

(b) How will you prepare mother spawn in saline bottle?

13. (a) List down the factors affecting mushroom bed preparation.

Or

(b) How will you harvest button mushroom?

14. (a) Write short notes on the pathogens and control of diseases of mushrooms caused by insects.

Or

(b) Examine the significance of mushrooms.

15. (a) How will you prepare mushroom cutlet?

Or

(b) Explain canning of mushrooms.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Discuss the cultivation technology of *Pleurotus* species.

Or

(b) Examine the prospects of mushroom cultivation as a small scale industry.

17. (a) List down the composition of oat meal agar medium add a note on its preparation.

Or

(b) How will you prepare test tube slants to store mother culture?

18. (a) Explain the cultivation of oyster mushroom.

Or

(b) Describe the spawn running and harvesting of mushrooms.

19. (a) Critically analyse the disease of mushrooms caused by fungal pathogens.

Or

(b) Discuss the nutritional value of mushrooms.

20. (a) Describe the preparation of mushroom soup.

Or

(b) Explain the ingredients and preparation of mushroom curry.

———————

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Reg. No. : .....

...de) No. : 10742 E Sub. Code : ASBO 42

(CBCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Botany

Based Subject — PRESERVATION OF FRUITS AND VEGETABLES

(For those who joined in July 2020 onwards)

Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Which among the following is called energy yielding food?

(a) Carbohydrates (b) Proteins

(c) Fats (d) Vitamins

At least half of our diet should contain

(a) Fruits and milk

(b) Meat and fish

(c) Grains and vegetables

(d) Chicken and egg

Banana can be best preserved by

(a) Lyophilization (b) Refrigeration

(c) Open drying (d) Freezing

Canning is normally done using

(a) Wax coated sheets (b) Tins

(c) Plastic cans (d) Polythene sheets

Aluminium cans are not suitable for the preservation of

(a) Un ripened fruits (b) Alocholic beverages

(c) Fish (d) Vegetables

PART B — (5 × 5 = 25 marks)

...swer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

(a) Bring out the nutritive value of vegetables.

Or

(b) List down the insects responsible for the spoilage of fruits.

3. Sterilization by gamma rays is called

(a) Refrigeration (b) Radiation

(c) Dehydration (d) Lyophilization

4. The method of reservation in which rapid freezing followed by dehydration under vaccum is called

(a) Lyophilization (b) Sterilization

(c) Cold dehydration (d) Cryopreservation

5. Identify the suitable fruit meant for juice preparation

(a) Orange (b) Grape

(c) Pineapple (d) Jack fruit

6. Normally squashes are prepared from

(a) Guava (b) Lemon

(c) Mango (d) Pineapple

7. Pickles are prepared by

(a) Sugar and chilly powder

(b) Salt only

(c) Salt and chilly powder

(d) Sugar only

12. (a) Explain freezing.

Or

(b) Describe the process of drying.

13. (a) How will you prepare squash from grapes?

Or

(b) Describe the preparation of jellies from guava.

14. (a) List down the ingredients of Chutney.

Or

(b) How will you prepare sauce?

15. (a) Describe the different kinds of materials used in canning.

Or

(b) How will you preserve the carrot by canning?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Analyse the factors that affect the storage of vegetables.

Or

(b) Discuss, in detail, the microbial spoilage of fruits.

17. (a) Write an essay on chemical preservation.

Or

(b) Explain the canning and drying of fruits and vegetables.

18. (a) How will you prepare the squash from grape?

Or

(b) What is meant by mixed fruit? How will you prepare it?

19. (a) How will you prepare pickle from garlic?

Or

(b) Write an essay on the preparation of ketchup from tomato.

20. (a) Explain the strategy adopted for the preservation of bean.

Or

(b) Critically examine the preservation of mushroom.

———————

(6 pages) **Reg. No. :** .....

Code No. : 30494 E **Sub. Code : CABO 11**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

First/Third Semester

Botany – Allied

PLANT DIVERSITY AND MEDICINAL PLANTS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Common name of *Polyporus* is

(a) Bracket fungi (b) Cup fungi

(c) Wood fungi (d) Rock fungi

2. Phycoerythrin pigment is obtained from

(a) *Volvox* (b) *Gracilaria*

(c) *Caulerpa* (d) *Oedogonium*

3. *Usnea* is morphologically a

(a) Foliose lichen

(b) Crustose lichen

(c) Squamolose lichen

(d) Fruticose lichen

4. In *Funaria*, the antherozoids are

(a) aciliated (b) bicilated

(c) multiciliated (d) monociliated

5. Which among the following is called the vascular cryptogams?

(a) Bryophyte (b) Algae

(c) Pteridophyte (d) Gymnosperm

6. Turpentine is obtained from

(a) *Pinus* (b) *Lycopodium*

(c) *Funaria* (d) *Nostoc*

7. Cyathia inflorescence is commonly found in

(a) Poaceae (b) Rutaceae

(c) Asclepiadaceae (d) Euphorbiaceae

8. Gland dotted leaves are the characteristic feature of

(a) Asclepiadaceae (b) Rutaceae

(c) Poaceae (d) Euphorbiaceae

9. Vincristine is obtained from

(a) *Solanum torvum*

(b) *Papaver somniferum*

(c) *Catharanthus roseus*

(d) *Vetiveria zizanoides*

10. *Milagu* is the tamil vernacular for the plant

(a) *Coleus amboinicus*

(b) *Catharanthus roseus*

(c) *Phyllanthus amarus*

(d) *Piper nigrum*

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the asexual reproduction of *volvox*.

Or

(b) Highlight the economic uses of fungi.

12. (a) Examine the internal organization of the thallus of *Usena*.

Or

(b) Analyse the internal structure of the sporophyte of *Funaria*.

13. (a) Describe the internal structure of leaf of *Lycopodium*.

Or

(b) Highlight the internal structure of needle of *Pinus*.

14. (a) Identify the merits and demerits of Bentham and Hooker's system of classification.

Or

(b) Write down the systematic position and key identification characters of Asclepiadaceae.

15. (a) List down the phytochemical constituents of *Piper nigrum*.

Or

(b) Evaluate the phytochemical compounds of *Aloe Vera*.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Examine the general characters of algae.

Or

(b) Describe the vegetative structure of *Polyporus*.

17. (a) Discuss the vegetative and asexual modes of reproduction observed in *Usnea*.

Or

(b) Highlight the structural organization of the female gametophyte of *Funaria*.

18. (a) Write an essay on the general characters of Gymnosperms.

Or

(b) Describe the organization of Strobili in *Lycopodium*.

19. (a) Discuss, in detail, the salient features of Euphorbiaceae.

Or

(b) Bring out the diagnostic features of Poaceae.

20. (a) Explain the botanical and pharmacological features of *Coleus amboinicus*.

Or

(b) Decipher the phytochemical constituents of *Catharanthus roseus*.

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(6 pages) **Reg. No. :**.....

Code No. : 30491 E **Sub. Code : CMBO 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

First Semester

Botany — Core

ALGAE AND BRYOPHYTES

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. How many classes are there in Fritsch's classification of algae?
   (a) 10 (b) 11
   (c) 12 (d) 14

2. Volvox is a
   (a) Colonial algae
   (b) Filamentous algae
   (c) Pseudoparenchymatous algae
   (d) Siphonous algae

3. *Sargassum* belongs to the class
   (a) Bacillariophyceae
   (b) Pheophyceae
   (c) Rhodophyceae
   (d) Xanthophyceae

4. Conceptacles are found in
   (a) *Caulerpa* (b) *Sargassum*
   (c) *Gracilaria* (d) *Nostoc*

5. Identify the seaweed which is widely cultivated for commercial uses
   (a) *Fucus*
   (b) *Sargassum*
   (c) *Enteromorpha*
   (d) *Kappaphycus*

6. Agar – agar is obtained from
   (a) *Oscillatoria* (b) *Nostoc*
   (c) *Spirulina* (d) *Gelidium*

7. Single cell protein is obtained from
   (a) *Osciliatoria* (b) *Vaucheria*
   (c) *Spirulina* (d) *Chlorella*

8. Which among the following is a good nitrogen fixer?

(a) *Nostoc* (b) *Gracilaria*

(c) *Oedogonium* (d) *Sargassum*

9. Which among the following is a common feature of Bryophytes?

(a) Well developed root system

(b) Well developed sex organs

(c) Well developed shoot system

(d) Well developed vegetative organs for reproduction

10. The thalloid plant body is found in

(a) *Marchantia* (b) *Sphagnum*

(c) *Funaria* (d) *Salvinia*

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List down the classes of algae as proposed by F.E. Fritsch (1945).

Or

(b) Describe the internal structure of the assimilators of *Caulerpa*.

12. (a) Analyse the economic importance of *Gracilaria* and *Sargassum*.

Or

(b) Explain the organization of spermatangia in *Gracilaria*.

13. (a) List down the requirements of seaweed cultivation.

Or

(b) Why *Gracilaria* is commercially cultivated in large scale?

14. (a) Explain the morphology of *Nostoc*.

Or

(b) Bring out the economic potential of *Spirulina*.

15. (a) Draw the male gametophyte of *Marchantia*.

Or

(b) Give the outline classification of Bryophytes as proposed by Rothmaler (1951).

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write an essay on the general characters of algae.

Or

(b) Critically examine any four life cycle patterns observed in algae.

17. (a) Describe the vegetative reproduction found in *Chara*.

Or

(b) Explain the structure of the female conceptacle of *Sargassum*.

18. (a) How will you extract agar-agar from a seaweed?

Or

(b) "Algae possess potential economic utility" – Justify the statement with suitable examples.

19. (a) Highlight the commercial cultivation of *Spirulina*.

Or

(b) Are *Nostoc* suitable for commercial cultivation? Explain.

20. (a) Critically examine the general characters of Bryophytes.

Or

(b) Describe the organization of sporophytes of *Marchantia*.

———————

(6 pages) 19/12/2022 A/N

Reg. No. : .....

Code No.: 30492 E **Sub. Code: CMBO 21**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022

Second Semester

Botany — Core

PLANT ANATOMY AND MICROTECHNIQUES

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Histogen theory was proposed by

(a) Foster (b) Eames

(c) Esau (d) Hanstein

2. Collenchyma is a

(a) Complex tissue

(b) Simple tissue

(c) Secretory tissue

(d) None of the above

3. Dorsiventral leaf is seen in

(a) Dicot plant

(b) Monocot plant

(c) 'a' and 'b'

(d) None of these

4. Polyarch vascular bundle is found in

(a) Monocot root (b) Dicot root

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

5. Anomalous secondary growth is present in

(a) Helianthus (b) Dracaena

(c) Nerium (d) Cucurbita

6. Alburnum is the name of ———— wood

(a) Sap (b) Spring

(c) Soft (d) Heart

7. Unilacunar node is seen in

(a) Polygonum (b) Azadirachta

(c) Boerhaavia (d) Justicia

8. One of the following is not an example for epidermal outgrowth

(a) Trichome (b) Glands

(c) Stomata (d) Cortex

9. Haematoxylin is an example for

(a) Azo dye (b) Acid stain

(c) Neutral stain (d) Basic stain

10. Who invented the electron microscope?

(a) Janson

(b) Robert hook

(c) Knoll and Rusks

(d) Pasteur

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Highlight the characteristics of meristems?

Or

(b) Explain the structure and functions of Parenchyma.

12. (a) Distinguish between monocot and dicot root anatomically.

Or

(b) Draw the cross section of monocot leaf.

13. (a) Describe the secondary thickening takes place in dicot root.

Or

(b) Write the Anomalous secondary thickening takes place in Dracaena stem.

14. (a) What are glands? Highlight their functions.

Or

(b) Explain the structure of trilacunar node.

15. (a) Describe the structure of compound microscope.

Or

(b) Write short notes on maceration.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Explain the theories of meristem.

Or

(b) Give a detailed account on complex tissues.

17. (a) With neat labelled diagram, describe the internal structure of dicot leaf.

Or

(b) Describe the internal structure of young dicot stem.

18. (a) Describe how does secondary growth takes place in dicot stem.

Or

(b) Explain the anomalous secondary growth of Boerhaavia stem.

19. (a) Explain the different types of stomata with examples.

Or

(b) Give a detailed account on Trichomes.

20. (a) Describe the principle and structure of TEM.

Or

(b) Discuss in detail the methods of staining and its importance.

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(6 pages)

Reg. No. : .....

Code No. : 30493 E **Sub. Code : CMBO 31**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Botany — Core

FUNGI, PLANT PATHOLOGY AND LICHENOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following is a reserve food material in fungi?
   (a) Starch (b) Glycogen
   (c) Fat (d) Glucose

2. An example of unicellular fungi
   (a) Yeast (b) *Polyporus*
   (c) *Pencillium* (d) *Aspergillus*

3. Primary host of *Puccinia* is
   (a) Wheat (b) Barbery
   (c) Maize (d) Rice

4. *Pleurotus sajor-caju* is commonly called as
   (a) White button mushroom
   (b) Oyster mushroom
   (c) Paddy straw mushroom
   (d) Milky mushroom

5. Vectors are ———— agents.
   (a) Disease control
   (b) Disease resistant
   (c) Disease dissemination
   (d) Disease symptom

6. Effective fungicide for the control of Blast disease of rise
   (a) Mancozeb (b) Tricyclazole
   (c) Fosteyl Al (d) Plantvax

7. Citrus canker is a ———— disease.
   (a) Fungus (b) Bacteria
   (c) Virus (d) Mycoplasma

8. The host plant of bunchy top of Banana is
   (a) Musa (b) Rice
   (c) Citrus (d) Sorghum

9. The algal partner of lichen is known as
   (a) Phycobiont (b) Mycobiont
   (c) Canker (d) Smut

10. The lichens which grow on bark of trees are known as ————
    (a) Saxicoles (b) Corticoles
    (c) Terriocoles (d) Sterigma

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Who is weed of the laboratory? Explain briefly its structure.

    Or

    (b) Explain the general characteristics of fungi.

12. (a) Elaborate the role of fungi in industries.

    Or

    (b) Describe the sexual reproduction of *Peziza*.

13. (a) Describe the symptomatology of the red rot of sugarcane and mention any two control method.

    Or

    (b) Explain the causal organism and diffemination of tikka disease of groundnut.

14. (a) Name the causal organism and symptoms of cirtrus canker.

    Or

    (b) Give a critical note on Bunchy top of Banana.

15. (a) Describe the morphology of *Usnea*.

    Or

    (b) Explain Soredia and Isidia with suitable sketch.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Write an essay on classifications of fungi.

Or

(b) Illustrate the sexual reproduction of fungi.

17. (a) Summarize the economic importances of fungi.

Or

(b) Distinguish the uredospore and teleutospore stages of *Puccinia*.

18. (a) Explain the symptoms and control measures of Paddy blast.

Or

(b) Explain the symptoms and control measures of tikka disease of groundnut.

19. (a) How are plant viruses transmitted? Give the control measures for a typical plant viral disease that you studied.

Or

(b) What measures would you adopt to control the citrus canker and why?

20. (a) Organize the economic importance of Lichens.

Or

(b) How will you classify lichens?

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(6 pages)

Reg. No. : _____

Code No. : 30498 E **Sub. Code : CNBO 31**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Botany

Non Major Elective – GARDENING AND GARDEN MANAGEMENT

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Plant suitable for Pergolas among the following
   (a) *Tuja* (b) *Phyllanthus*
   (c) Jasmine (d) *Casuarina*

2. Fountains essential part of
   (a) Japanese garden (b) Moghul garden
   (c) English Garden (d) American Garden

3. Which among the following plant is suitable for leaf cutting?
   (a) *Coleus* (b) *Sensevieria*
   (c) *Croton* (d) *Nerium*

4. Diggers, a handy garden implement, is used to
   (a) Excavate the soil
   (b) Remove the unwanted leaves
   (c) Eliminate the buds
   (d) Hang the plants

5. Plant suitable for topiary
   (a) *Tecoma* (b) *Duranta*
   (c) *Thunbergia* (d) *Clerodendron*

6. Plants suitable for arches are
   (a) Creepers (b) Climbers
   (c) Shrubs (d) Small plants

7. Potato tuber production stops totally at
   (a) 25°C (b) 30°C
   (c) 35°C (d) 40°C

8. Which among the following is not part of the "Panchkaviya"?
   (a) Cow dung (b) Cow urine
   (c) Cow milk (d) Oil

9. Plant suitable for Bonsai making and which is easily available
   (a) *Tectona* (b) *Banyan tree*
   (c) *Acacia* (d) *Caesalpinia*

10. Hanging baskets are made of
    (a) Bamboo sticks (b) Plastic containers
    (c) Rubber sheets (d) Polythene nets

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Briefly explain the components of Moghul Garden.

    Or

    (b) Classify the types of garden.

12. (a) How will you perform simple layering?

    Or

    (b) Highlight the stem cutting.

13. (a) Explain the preparation of hedges in a garden.

    Or

    (b) Identify the plants commonly used in rockery.

14. (a) List down the earthworms used in our country for vermicomposting.

    Or

    (b) Bring out the ingredients of *Panchakaviya*.

15. (a) Explain terrarium as a component of gardens.

    Or

    (b) "Bonsai has unique aesthetic value" — Justify.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) How will you establish English gardens?

Or

(b) List down the advantages and disadvantages of gardens.

17. (a) How will you perform root cutting?

Or

(b) Write an essay on garden implements.

18. (a) How will you prepare lawn?

Or

(b) Are arches required for gardens? If so explain with suitable examples.

19. (a) Describe the preparation of vermicompost.

Or

(b) Explain the components of kitchen garden.

20. (a) How will you maintain the indoor garden?

Or

(b) Describe the procedure of preparing hanging baskets in indoor gardens.

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PART C — (5 × 8 = 40 marks)

swer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

) Describe the structure of mature microsporangium.

Or

) Describe the types of ovules.

a) Discuss in detail about complex tissue.

Or

) Describe the secondary growth in dicot stem.

a) Write short notes on (i) Imbibition (ii) Osmosis.

Or

) Describe calvin cycle.

a) Write an essay on mass cultivation of Nostoc.

Or

b) Explain the mass production of yeast.

a) Write in detail about meristem culture.

Or

b) Write an essay about the applications of plant tissue culture.

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Reg. No. : .....

Code No. : 10585 E **Sub. Code : SABO 21/ AABO 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2022.

Second/Fourth Semester

Botany — Allied

EMBRYOLOGY, PLANT ANATOMY, PHYSIOLOGY AND BIOTECHNOLOGY

(For those who joined in July 2017 – 2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Inverted ovule is called as

(a) Campylotropous (b) Orthotropous

(c) Anatropous (d) Hemianatropous

2. Cellular endosperm is seen in

(a) Cocos (b) Cucurbita

(c) Phaseolus (d) Mangifera

3. Example for simple tissue

(a) Parenchyma (b) Collenchyma

(c) (a) and (b) (d) Xylem

4. Polyarch xylem is found in

(a) Dicot root (b) Monocot root

(c) Dicot stem (d) Monocot stem

5. Which part of the root is useful in absorption of water?

(a) Root hair (b) Root tip

(c) Epidermis (d) Endodermis

6. The stable 3 carbon compound of dark reaction is

(a) Phosphoglyceric acid

(b) Ribulosebiphosphate

(c) Phosphoenol pyruvate

(d) Dihydroxy acetoe phosphate

7. Nostoc is a _____.

(a) Bacteria (b) Fungi

(c) Prokaryote (d) Eukaryote

8. Nostoc belongs to the class

(a) Chlorophyceae (b) Phaeophyceae

(c) Rhodophyceae (d) Cyanophyceae

9. Who is called as father of plant tissue culture?

(a) Skoog (b) White

(c) Haberlandt (d) Bentham

10. In tissue culture, the pH of the culture medium is adjusted to

(a) 5.8 (b) 6.8

(c) 6.2 (d) 7.5

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe the structure of megasporangium.

Or

(b) Write short notes on Ruminate endosperm.

12. (a) Describe the internal structure of dicot stem.

Or

(b) Describe the internal structure of moncot root.

13. (a) Give a brief account on Ascent of sap.

Or

(b) Describe the types of transpiration.

14. (a) Describe the thallus structure of Nostoc.

Or

(b) Comment on Yeast.

15. (a) Describe about callus culture.

Or

(b) Write about the preparation of M.S. medium.

(6 pages) **Reg. No. : .....**

Code No. : 30212 E **Sub. Code : SABO 21/ AABO 21**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Second/Fourth Semester

Botany – Allied

EMBRYOLOGY, PLANT ANATOMY, PHYSIOLOGY AND BIOTECHNOLOGY

(For those who joined in July 2017 – 2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The functions of tapetum is
   (a) nutrition
   (b) shelter
   (c) dispersal
   (d) all of the above

2. The types of endosperm
   (a) 1 (b) 2
   (c) 3 (d) 4

3. The types of Meristem are
   (a) 1 (b) 2
   (c) 3 (d) 4

4. The types of Xylem
   (a) 1 (b) 2
   (c) 3 (d) 4

5. The absorption of water takes place in ———— types.
   (a) 1 (b) 2
   (c) 3 (d) 4

6. The typs of Transpiration
   (a) 1 (b) 2
   (c) 3 (d) 4

7. Cyanobacteria is related with

(a) Nostoc (b) Chlorella

(c) Yeast (d) All of above

8. The nickname "Elictor"

(a) Nostoc (b) Azolla

(c) Yeast (d) All of above

9. Scientist related to Tissue culture

(a) Haberlant (b) Albert

(c) Drawin (d) Neton

10. The types of culture medium

(a) 2 (b) 3

(c) 5 (d) 6

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe the development of male gametophyte.

Or

(b) Give a detailed account of Dicot embryo.

12. (a) Describe about the types of Meristem.

Or

(b) Write down the Internal structure of Monocot stem.

13. (a) Describe about ozmosis and its significance.

Or

(b) Explain about the Ascent of sap.

14. (a) Explain the external morphology of Nostoc.

Or

(b) Describe the fermenter used in Mass culture of yeast.

15. (a) Describe about Meristem culture.

Or

(b) Write about the basic requirements needed for tissue culture.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe about the female gametophyte.

Or

(b) Write an essay about Double fertilization.

17. (a) Describe the secondary thickening in Dicot stem.

Or

(b) Explain about the Phloem.

18. (a) Describe the Clavin cycle.

Or

(b) Explain the mechanism of stomatal transpiration.

19. (a) Describe the importance of biofertilizer.

Or

(b) Describe the methods of reproduction of yeast cell.

20. (a) Explain the callus culture.

Or

(b) Describe about the applications of plant tissue culture.

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...ges) **Reg. No. :** .....

...ode No. : 10582 E Sub. Code : SEBO 6 A

(CBCS) DEGREE EXAMINATION, APRIL 2022.

Sixth Semester

Botany — Core

Major Elective – III – PLANT ECOLOGY AND PHYTOGEOGRAPHY

(For those who joined in July 2017 onwards)

... : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Microbes are generally considered as the

(a) Producers

(b) Primary consumers

(c) Secondary consumers

(d) Tertiary consumers

2. Dominant vegetation of the megatherms is

(a) Tropical rain forests

(b) Temperate forests

(c) Deciduous forests

(d) Alpine forests

3. Who coined the term "ecosystem"?

(a) Tansley (b) Daubenmire

(c) Odum (d) Raunkiaer

4. Which among the following is a/an aquatic ecosystem?

(a) Coral (b) Grassland

(c) Tundra (d) Rain forest

5. Group of plants belonging to the same species is called

(a) Population (b) Community

(c) Family (d) Phylum

6. Which among the following is the correct definition for species?

(a) Inter-crossing individuals

(b) Inter-breeding individuals

(c) Intra-breeding individuals

(d) Out crossing individuals

Addition of microbial cultures to increase degradation of plastics is called

(a) Biodegradation (b) Bioventing

(c) Biostimulation (d) Bioaugmentation

Fungal degradation of organic contaminants is called

(a) Bioventing (b) Bioleaching

(c) Biotransformation (d) Biofiltration

In Tamil Nadu, where do you find mangrove plants?

(a) Mandapam (b) Pitchavaram

(c) Muttom (d) Cuddalore

National Remote Sensing Agency (NRSA) is located at

(a) Bangalore (b) Hyderabad

(c) Kochi (d) Chennai

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Highlight the types of biotic factors.

Or

(b) List down the types of abiotic factors.

12. (a) Classify the ecosystems.

Or

(b) Give an account of the ecological classification of plants.

13. (a) Examine the concept of autecology.

Or

(b) Explain the term synecology.

14. (a) Explain the concept of biomonitoring.

Or

(b) Elucidate the role of microbes in biodegradation.

15. (a) Examine the principle of phytogeography.

Or

(b) Elucidate the concept of endemism.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Critically examine the Nitrogen cycle.

Or

(b) Discuss the light as a climatic factor.

17. (a) Explain the biotic and abiotic factors of a typical aquatic ecosystem.

Or

(b) Describe the components of forest ecosystem.

18. (a) Discuss the units of vegetation.

Or

(b) How will you study the vegetation using quadrat method?

19. (a) Discuss, in detail, the *in-situ* bioremediation.

Or

(b) What do you mean by *ex-situ* bioremediation? Explain with suitable example.

20. (a) Write an essay on continental drift.

Or

(b) Discuss the center of origin of paddy.

(6 pages) Reg. No. : .....

Code No. : 30209 E **Sub. Code : SEBO 6 A**

B.Sc.(CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Sixth Semester

Botany

Major Elective – III – PLANT ECOLOGY AND PHYTOGEOGRAPHY

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. The main source of carbon is

(a) CO (b) CO_3

(c) CO_2 (d) $CaCO_3$

2. The word environment is derived from

(a) Greek (b) Latin

(c) French (d) English

3. Opuntia is a

(a) Xerophytic plant

(b) Halophytic plant

(c) Hydrophytic plant

(d) Mesophytic plant

4. The word ecosystem was coined by

(a) Tanslay (b) Linnaeus

(c) Bateson (d) Punnet

5. More than two species are dominant in plant formation is called

(a) Association (b) Consociation

(c) Lociation (d) Plant formation

6. Quadrat method was first used by

(a) Bentham (b) Engler

(c) Clements (d) Linnaeus

7. Cleaning up of toxic contaminants in the environment using microbes is called

(a) Bioleaching (b) Phytoremediation

(c) Bioremediation (d) Biodegradation

8. Which one can degrade hydrocarbons

(a) Polyporus (b) Aspergillus

(c) Pseudomonas (d) Streptococcus

9. Centre of origin of tomato is

(a) South America (b) Japan

(c) Philippines (d) China

10. Which of the following part of Tamil Nadu have more ever green forests?

(a) Salem

(b) Dharmapuri

(c) Ramanathapuram

(d) Nilgiris

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the role of rainfall which influence on vegetation.

Or

(b) Give a brief account on Nitrogen cycle.

12. (a) Describe forest ecosystem.

Or

(b) Explain the anatomical adaptations of hydrophytes.

13. (a) Write short notes on consociation.

Or

(b) Give a brief account on Association.

14. (a) Give a brief account on Bioindicators.

Or

(b) Give a brief account on biodegradation.

15. (a) Briefly describe the regetational types of Tamilnadu.

Or

(b) Write short notes on endemism.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Give a detailed account on biotic factors.

Or

(b) Give a detailed account on Carbon cycle.

17. (a) Give a detailed account on components of an ecosystem.

Or

(b) Explain the morphological adaptations of Xerophytes.

18. (a) Describe the quadrat method adopted to study plant community.

Or

(b) Give a detailed account on migration.

19. (a) Give a detailed account on Bioremediation.

Or

(b) What is Biosensor? Describe the important components of Biosensor.

20. (a) Write an essay on continental drift.

Or

(b) Write an essay on Remote sensing.

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Reg. No. : .....

Code No. : 10576 E Sub. Code : SMBO 61

(CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Botany — Core

PLANT PHYSIOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

When water enters the cell, the pressure exerted on the cell wall is

(a) Osmotic pressure

(b) Suction pressure

(c) Turgor pressure

(d) Root pressure

Plant growth curve is commonly called

(a) Sympodial curve

(b) Monopodial curve

(c) Sigmoid curve

(d) Organoid curve

Which among the following phase accounts for the longest duration in plant life

(a) Lag phase (b) Log phase

(c) Stationary phase (d) Death phase

Exposure of seed to low temperature treatment is known as

(a) Stratification (b) Scarification

(c) Photoperiodism (d) Vernalization

Breaking of seed dormancy by break opening the seed coat is called

(a) Stratification (b) Scarification

(c) Photolysis (d) Chemolysis

2. Diffusion of water through semipermeable membrane from dilute solution to concentrated solution is

(a) Imbibition (b) Osmosis

(c) Plasmolysis (d) Necrosis

3. Who said that 'transpiration is a necessary evil'?

(a) Bose (b) Steward

(c) Anderson (d) Curtis

4. Cohesion theory of ascent of sap was proposed by

(a) Munch (b) Stephen Hales

(c) Dixon and Joly (d) Bose

5. The optimum temperature for photosynthesis is

(a) 25-35°C (b) 10-15°C

(c) 35-40°C (d) 20-25°C

6. Maximum photosynthesis occurs in

(a) Blue light (b) Red light

(c) White light (d) Green light

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account of imbibition.

Or

(b) Examine any two factors affecting the water absorption.

12. (a) Bring out the significance of ascent of sap.

Or

(b) State the explain the Cohesion theory.

13. (a) List down any two factors that affect the photosynthesis.

Or

(b) Bring out any four inhibitors of light reaction.

14. (a) Explain the stages of growth curve.

Or

(b) Give an account of vernalization.

15. (a) Classify the stresses affecting the plants.

Or

(b) Highlight any two methods of breaking the dormancy of seed.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the mechanism of passive water absorption.

Or

(b) Discuss the mechanism of guttation.

17. (a) Analyse the mechanism of ascent of sap.

Or

(b) Critically examine the role of macro elements.

18. (a) Discuss in detail, the non-cyclic photophosphorylation.

Or

(b) Critically review the CAM pathway.

19. (a) Write an essay on the origin, site of action and physiological role of auxins.

Or

(b) Describe the phenomenon of photoperiodism.

20. (a) Critically review the effect of salt stress in plants and add a note on how the plants are alleviating the salt stress.

Or

(b) Discuss in detail the impact and remedial measures of plant for drought stress.

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(6 pages) Reg. No. : .....

Code No. : 30203 E **Sub. Code : SMBO 61**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Sixth Semester

Botany – Core

PLANT PHYSIOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The membrane which allows the movement of only water molecules to pass through it and not the solute particles
   (a) Permeable membrane
   (b) Semipermeable membrane
   (c) Impermeable membrane
   (d) Selectively permeable membrane

2. The membrane which allows passage of solvent as well as some selective solutes and prevents others is called
   (a) Permeable membrane
   (b) Semipermeable membrane
   (c) Selectively permeable membrane
   (d) Impermeable membrane

3. Which of the following explain ascent of sap?
   (a) Cohesion theory (b) Mass flow
   (c) Diffusion (d) Guttation

4. Transpiration rate is dependent upon
   (a) Stomatal frequency (b) Position of stomata
   (c) State of stomata (d) All the above

5. H_2 donor during photosynthesis is
   (a) ATP (b) NADP
   (c) NADPH (d) NADH

6. In Glycolysis, glucose splits into compounds which are
   (a) 5 – carbon (b) 4 – carbon
   (c) 3 – carbon (d) 6 – carbon

7. Which is the end product of oxidative phosphorylation?
   (a) ATP (b) ATP and Water
   (c) NADH (d) Oxygen

8. Electrons are removed during Glycolysis by
   (a) NAD
   (b) ATP
   (c) Molecular oxygen
   (d) Glyceraldehyde – 3 – phosphate

9. Identify the growth hormone responsible for promoting the seed dormancy
   (a) Gibberellin
   (b) Cytokinin
   (c) Abscissic acid
   (d) Ethylene

10. Identify the growth hormone that promotes ripening of fruits
    (a) Auxin (b) Gibberellin
    (c) Cytokinin (d) Ethylene

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account of Diffusion.

Or

(b) Explain the water potential.

12. (a) What do you mean by Transpiration pull? Explain with example.

Or

(b) Highlight the role of micro nutrients.

13. (a) Trace the path of carbon in any one of the C4 cycles that you have studied.

Or

(b) Bring out the enzymes involved in Oxidative phosphorylation.

14. (a) What is mean by photoperiodism? What role do they play in plant physiology?

Or

(b) Write shorts notes on ethylene.

15. (a) Highlight the alleviating measures of plants in response to frost stress.

Or

(b) Highlight the remedial measures adopted by the plants for heat stress.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Write an essay on Osmosis.

Or

(b) Examine the mechanism of stomatal transpiration.

17. (a) Write an essay on the macro elements.

Or

(b) State and explain the Munch's Mass flow hypothesis.

18. (a) Explain the dark reaction with suitable flow chart.

Or

(b) Examine the pathway of Glycolysis.

19. (a) Write an essay on the origin, site of action and physiological role of Gibberellic acid.

Or

(b) Discuss in detail the phenomenon of vernalization.

20. (a) What do you mean by seed dormancy? How will you break the dormancy?

Or

(b) Examine the impact of heat stress in plants. Add a note the plants are alleviating such stress.

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ges) Reg. No. : .....

ae No. : 10577 E Sub. Code : SMBO 62

. (CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Botany — Core

ENETICS, EVOLUTION AND BIOSTATISTICS

(For those who joined in July 2017 onwards)

: Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

The tendency of an offspring to resemble its parent is known as

(a) Variation (b) Heredity

(c) Resemblance (d) Inheritance

Which among the following is the monohybrid test cross ratio?

(a) 1:1:1:1 (b) 1:2

(c) 1:3 (d) 1:1

"Inheritance of acquired character" was proposed by

(a) Wallace (b) Pope

(c) Darwin (d) Lamarck

Individual respondents, focus groups, and panels of respondents are categoriesed as

(a) Primary data source

(b) Secondary data source

(c) Itemized data source

(d) Pointed data source

Most frequent observation in a data set is called

(a) Mode (b) Median

(c) Range (d) Mean

PART B — (5 × 5 = 25 marks)

nswer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

(a) Explain the Mendel's monohybrid cross.

Or

(b) State and explain Mendel's laws.

3. Who coined the term linkage?

(a) Morgan (b) De vries

(c) Corren (d) Mendel

4. The phenomenon of linkage was first observed in the plant

(a) *Lathyrus odoratus* (b) *Pisum sativum*

(c) *Datural metel* (d) *Mirabilis jalaba*

5. Who among the following has proved that DNA is the genetic material?

(a) Meselson - Stahl (b) Hershey - Chase

(c) Bateson - Punnet (d) Hardy - Weinberg

6. Identify the enzyme responsible for the negative supercoiling of DNA

(a) Helicase (b) Gyrase

(c) SSB protein (d) Ligase

7. Who among the following has provided evidences for the chemosynthetic theory of evolution?

(a) Urey-Miller (b) Hardy-Weinberg

(c) Pope-Wallace (d) Darwin-Lamarck

12. (a) List down the types of linkage.

Or

(b) Explain the phenomenon of recombination with an example.

13. (a) Illustrate the Watson – Crick model of DNA.

Or

(b) Prove that DNA is the genetic materials.

14. (a) Give an account of Lamarkcism.

Or

(b) State and explain the modern synthetic theory of evolution.

15. (a) Define mode. Write down the formula used for its calculation.

Or

(b) What do you mean by chi-square test? How it is applied in statistics?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss any two deviations of Mendelian dihybrid inheritance.

Or

(b) Write an essay on polygenic inheritance.

17. (a) Discuss the determination of sex in plants with a suitable example.

Or

(b) Write an essay on population genetics.

18. (a) Analyse the DNA replication.

Or

(b) Write an essay on genetic code.

19. (a) Write down any five evidences in support of chemosynthetic theory.

Or

(b) Critically examine the speciation.

20. (a) Describe the formula used, merits and demerits of mean.

Or

(b) How will you calculate the median? What are their merits and demerits?

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(6 pages)

Reg. No. :.....

Code No. : 30204 E **Sub. Code : SMBO 62**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Sixth Semester

Botany — Core

GENETICS, EVOLUTION AND BIOSTATISTICS

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. 15:1 ratio is
   (a) Phenotypic ratio of supplementary gene
   (b) Phenotypic ratio of complementary gene
   (c) Phenotypic ratio of duplicate factor
   (d) Phenotypic ratio of dihybrid cross

2. Incomplete dominance is seen in
   (a) Maize (b) Tobacco
   (c) Lathyrus (d) Mirabilis

3. Production of recombination of gene is due to
   (a) Linkage (b) Coupling
   (c) Repulsion (d) Crossing over

4. Male sterility is observed in
   (a) Pea (b) Sugarcane
   (c) Sorghum (d) Maize

5. An enzyme that joints okazaki fragments during DNA replication is
   (a) Amylase (b) Ligase
   (c) Polymerase (d) Lipase

6. Codons which can not code any amino acid is called as
   (a) Anti codon
   (b) Nonsense codon
   (c) Triplet code
   (d) Codon

7. Natural selection theory is also called as
   (a) Lamarckism
   (b) Neo Darwinism
   (c) Darwinism
   (d) Mutation theory

8. The theory proposed by Darwin
   (a) Lamarckism
   (b) Modern synthetic theory
   (c) Natural selection theory
   (d) Mutation theory

9. Example for measure of dispersion is
   (a) Median
   (b) Mean
   (c) Mode
   (d) Standard deviation

10. $x^2 = \sum \frac{(O-E)^2}{E}$ means
    (a) Median
    (b) Standard deviation
    (c) Chi-square
    (d) Mode

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short notes on lethal genes in maize.

Or

(b) Define and explain the following.
(i) Test cross (ii) Laws of mendel

12. (a) Explain about the sex determination in higher plants.

Or

(b) What is crossing over? What is its significance?

13. (a) DNA as the genetic material – Discuss.

Or

(b) Write notes on operon concept.

14. (a) What is isolation? Describe it.

Or

(b) Write short notes on speciation.

15. (a) Write short notes on

(i) Mean (ii) Mode

Or

(b) Write notes on collection of data.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain how is the 9:3:3:1 ratio modified to 9:7 due to genetic interaction.

Or

(b) With suitable illustration, explain the polygenic inheritance.

17. (a) Explain coupling and repulsion hypothesis of linkage.

Or

(b) Explain male sterility in Maize.

18. (a) Sketch the DNA double helix. Explain its mechanism of replication.

Or

(b) Write an essay on genetic code.

19. (a) Give a detailed account on Darwinism.

Or

(b) With suitable example, explain about evolutionary theories of Lamarck.

20. (a) Explain about standard deviation.

Or

(b) Explain about chi-square test.

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(6 pages)

Reg. No. : .....

Code No. : 30220 E **Sub. Code : SNBO 4 B/ ANBO 42**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Botany

Non Major Elective — BOTANY FOR COMPETITIVE EXAMINATIONS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Thallophyta comprises of
   (a) Algae and fungi
   (b) Algae only
   (c) Fungi only
   (d) Gymnosperms, algae and fungi

2. Vascular cryptogams is the other name for
   (a) Gymnosperms (b) Pteridophytes
   (c) Bryophytes (d) Fungi

3. Who among the following has introduced the binomial nomenclature?
   (a) Carl Linaneus (b) Theophrastus
   (c) Bentham (d) Hooker

4. Who among the following is widely regarded as the father of botany?
   (a) Aristotle (b) Gasper Bauhin
   (c) Theophrastus (d) Adanson

5. *Thuthuvalai* is botanically known as
   (a) *Solanum trilobatum*
   (b) *Andrographis paniculata*
   (c) *Solanum torvum*
   (d) *Solanum nigrum*

6. *Andrographis paniculata* is widely used as a home remedy for
   (a) Digestive disorder
   (b) Respiratory illness
   (c) Skin allergy
   (d) Joint pain

7. What is the end product of the Calvin cycle?

(a) PEP (b) ATP

(c) RuBP (d) AMP

8. Upward movement of water in plants is due to

(a) Transpiration

(b) Respiration

(c) Seed germination

(d) Evaporation

9. Who among the following has performed first plant tissue culture experiment in India?

(a) Guha (b) Haberlandt

(c) BGL Swamy (d) Govindarajulu

10. Which among the plant has been chosen by Mendel for his historical genetics experiments?

(a) *Pisum sativum*

(b) *Cucumis sativus*

(c) *Cucurbita pepo*

(d) *Antirhinum majus*

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List down the general characters of fungi.

Or

(b) Describe the economic importance of Bryophytes.

12. (a) Give an account of systems of classification.

Or

(b) Highlight the economic importance of Fabaceae.

13. (a) Bring out the medicinal properties of *Vetiver*.

Or

(b) Identify the phytochemical properties and medicinal uses of *Ocimum*.

14. (a) Explain the mechanism of transpiration.

Or

(b) Describe the basic steps of protein synthesis.

15. (a) Examine the structure of plant cell.

Or

(b) List down the types of simple permanent tissues found in plants.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Critically review the economic importance of Gymnosperms.

Or

(b) Discuss the structure of viruses.

17. (a) Describe the natural system of classification with a suitable example.

Or

(b) Examine the salient features of the family Cucurbitaceae.

18. (a) Analyse the medicinal properties and medicinal importance of *Zingiber officinale.*

Or

(b) Discuss the phytochemcial constituents and medicinal importance of *Acalypha.*

19. (a) Examine the factors affecting respiration.

Or

(b) Bring out the non-cyclic photophosphorylation.

20. (a) Highlight the Mendelian monohybrid cross.

Or

(b) Write an essay on Plant Tissue Culture.

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