



Course Code: 08CT11

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : Core Subject : First Semester : Paper – I

Course Title: ALGAE AND BRYOPHYTES

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

1. Xanthophyll is the principal pigment in the members of the class
(a) Chlorophyceae (b) Phaeophyceae (c) Rhodophyceae (d) Xanthophyceae
2. The reserve food material in chlorophyceae is
(a) Starch (b) Oil (c) Protein (d) Glucosides
3. Cap cells are the characteristic of the genus
(a) *Spirogyra* (b) *Oedogonium* (c) *Vaucheria* (d) *Chara*
4. In which of algae the *Vaucheria* is included?
(a) Phaeophyceae (b) Cyanophyceae (c) Rhodophyceae (d) Xanthophyceae
5. The receptacle are found in
(a) *Ectocarpus* (b) *Sargassum* (c) *Polysiphonia* (d) *Nemalion*
6. The algae in which basal heterocyst and akinete are present in
(a) *Oscillatoria* (b) *Gloeotricha* (c) *Nostoc* (d) *Chlamydomonas*
7. The unique feature of bryophytes compared to other green plant group is that
(a) They produce spores (b) The lack of vascular tissue
(c) They lack roots (d) Their sporophyte is attached to the gametophyte
8. The thalloid plant body is found in
(a) *Marchantia* (b) *Sphagnum* (c) *Funaria* (d) *Salvinia*
9. A specialized organ of the sporophyte for attachment to the gametophyte is called
(a) Stalk (b) Foot (c) Apophysis (d) Rood
10. The protonema is a stage in the life cycle of
(a) *Riccia* (b) *Funaria* (c) *Marchantia* (d) *Anthoceros*

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

11. Define Phycology
12. State the meaning of prokaryotes and eukaryotes
13. What is Hold fast?
14. What do you mean by Nannandrous speices?
15. What is Hormogones?
16. List out any three important characters of Bryophytes
17. Comment on Gemmae

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Specify the general characters of Algae (OR)
b) Mention the economic importance of Algae
19. a) Discuss the thallus structure of *Vaucheria* (OR)
b) Elucidate the *Diatoms* cell structure
20. a) Write a note on cystocarp of *Polysiphonia*. Draw neat and labeled diagrams (OR)
b) Summarise the asexual reproduction of *Nostoc*

21. a) Give the outline of Smith classification of Bryophytes and add a note on salient feature at class level (OR)
b) Describe the internal structure of *Anthoceros* thallus
22. a) Extend the vegetative reproduction of *Funaria* (OR)
b) Explain the sporophyte structure of *Funaria*

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Illustrate the outline of F.E.Fritsch classification of Algae. Mention the characters of algae at class level
24. Give an account of zoospore formation in *Oedogonium* with suitable diagrams
25. Demonstrate the sexual reproduction of *Sargassum*
26. Describe the structure of *Marchantia* sporophyte
27. Write an essay on generation of gametophyte in *Funaria*



Course Code:08CT12

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : Core Subject : First Semester : Paper – II

Course Title: FUNGI AND PLANT PATHOLOGY

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A (Remembering)

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

- Fungi are
 - Heterotrophs
 - Autotrophs
 - Pathogens
 - Parasites
- Pleurotus sajor-caju* is commonly called as
 - White button Mushroom
 - Oyster Mushroom
 - Paddy straw Mushroom
 - Shitake Mushroom
- The number of ascospore produced in typical asci is
 - 4
 - 8
 - Innumerable
 - 12
- Which one of the following is known as cat tail fungus?
 - Stemonitis*
 - Penicillium*
 - Agaricus*
 - Cercospora*
- Fungal hyphae with two genetically distinct nuclei are said to be
 - Heterokaryotic
 - Monokaryotic
 - Dikaryotic
 - Karyotic
- Primary host of *Puccinia* is
 - Wheat
 - Barbery
 - Maize
 - Rice
- Who is the pioneer of soil formation?
 - Fungi
 - Lichens
 - Algae
 - Bryophytes
- Saxicoles refer to lichens that grow on
 - Soil
 - Tree barks
 - Rock
 - Water
- Little leaf of Brinjal is caused by
 - Phytoplasma
 - Bacteria
 - Fungi
 - Virus
- The study of plant disease is called as -----
 - Phyto pathology
 - Palynology
 - Ecology
 - Entomology

SECTION – B (Remembering)

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- What is Primary Mycelium?
- Comment on Penicillin.
- What is heterocious pathogen?
- Define isogamy
- Expands 2-4-D
- List out any two fungal species name.
- What are Conidiophores?

SECTION – C (Understanding)

Answer ALL Questions:

(5 X 5 = 25 Marks)

- Write about the general characteristics of Fungi.(OR)
 - List out the Beneficial Role of Fungi with suitable examples
- Explain briefly about Sexual reproduction of *Penicillium* (OR)
 - Illustrate the structure of *Stemonitis*
- Write a Short notes on *Puccinia* (OR)
 - Give a short note on *Agaricus*

21. a) What are Lichens? Add its Economic importances. (OR)
b) What are soredia and isidia?
22. a) Briefly explain about Bunchy top of Banana (OR)
b) Write about the host plant, Causal organisms, Symptoms and Control measures of Little leaf of Brinjal.

SECTION – D (Applying)

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Write an essay on Classification of Fungi
24. Explain the detailed notes on Structure of *Penicillium*
25. Describe the Structure of Life cycle of *Puccinia*.
26. Illustrate the classification of Lichens
27. Write about the host plant, Causal organisms, Symptoms and Control measures of Citrus canker.



Course Code: 08CT31

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : Core Subject : Third Semester : Paper – I

Course Title: **BIOCHEMISTRY, BIOPHYSICS & BIOMETRICS**

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A (Remembering)

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

- Which one of the following is not a sugar?
a) Starch b) Glucose c) Ribose d) Sucrose
- How many asymmetric carbon atoms are present in the Fischer's formula of glucose?
a) 2 b) 3 c) 4 d) 5
- Who was proposed DNA helical structure?
a) Watson and Crick b) Beadle and Tatum
c) Kornberg and Nirenberg d) Wilkins and Franklin
- Conversion of DNA into mRNA is called
a) Translation b) Transcription c) Multiplication d) Synthesis
- Which one of the following protein contains iron?
a) Haemoglobin b) Peroxidase c) Cephalin d) Keratin
- Which one of the organ associated with respiration of plants?
a) Mitochondria b) Nucleus c) Chloroplast d) Golgi apparatus
- The unit of energy is -----
a) Watt b) Joule c) Joule/sec d) Joule/m
- Which of the following ranges of visible light used in photosynthesis?
a) 300 – 700 nm b) 350 – 750 nm c) 380 – 750 nm d) 390 – 790 nm
- Find the mode in the following data set (1,3,1,4,1,5,7,5,3,1,4,2,5,9,8 & 2)
a) 1 b) 7 c) 2 d) 5
- Stars in the sky is the example of
a) Finite population b) Infinite population c) Variable d) Sample

SECTION – B (Remembering)

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- What is Isomerism?
- Define Zwitter ion
- What is Ampholytes?
- To find out the mean for following data: 5,10,7,8,10,13,17,20,25,35,45
- Comment on ATP
- Define first law of thermodynamics
- List out the central tendency of biostatistics

SECTION – C (Understanding)

Answer ALL Questions:

(5 X 5 = 25 Marks)

- a) Write short note on chemical properties of Monosaccharide's. (OR)
b) Illustrate the helical structure of DNA.
- a) List out any ten protein names found in your bodies (OR)
b) Enumerate the properties of amino acids
- a) How do you apply the thermodynamic first law in living organisms? (OR)
b) Give a short note on Chloroplast
- a) Explain briefly about fluorescence (OR)

- b) What is electromagnetic spectrum? Add its association with Plant pigments.
22. a) Briefly explain about methods of collection of data? (OR)

b) To find out mode for the given data

CO5

Height of Students (cm)	120-130	130-140	140-150	150-160	160-170	170-180
No. of Students	5	7	8	14	5	7

SECTION – D (Applying)

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Give an account on the structure of Monosaccharide's
24. Elaborate the classification of Amino acid.
25. Describe the bioenergetics of Mitochondria.
26. Write an essay on Bioluminescence.
27. Calculate the mean and standard deviation from the following data

Length of the Leaf	1-4	2-8	4-10	5-10	10-11	12-14	15-17	18-20	21-25
Frequency (cm)	3	5	10	16	20	10	12	5	2



Course Code: 08CT32

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : Core Subject : Third Semester : Paper – II

Course Title: Genetics and Bioinformatics

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

1. The cross between recessive parents and F1 hybrid is called as
a) Back cross b) Test cross c) Monohybrid cross d) Dihybrid cross
2. Mendel's law of segregation is also called
a) Law of independent assortment b) Law of Purity of gametes
c) Both d) None.
3. Inheritance of ABO blood group illustrates
a) Endoploidy b) Polyploidy c) Multiple allelism d) Incomplete dominance
4. The term crossing over was proposed by
a) Morgan & Castle b) Jannsen c) Belling c) Stern & Hotta.
5. In *Drosophila*, the sex – linked inheritance was observed by
a) T.H. Morgan b) Baldeyer c) Kornberg d) Calvin
6. A Plasmid is a
a) Genetic material of a virus b) Extrachromosomal DNA in a bacterial cell c) Starch granule d) Fat granule
7. Which one is a output device?
a) Mouse b) Key board c) Print copy d) Pen drive
8. Which one is a computer language?
a) PASCAL b) HTML c) C, C++ JAVA d) All the above
9. The study of the full complement of proteins expressed by a genome is called_____
a) Proteome b) Proteomics c) Genomics d) All of the above
10. Restriction fragment length polymorphisms (RFLPs) is_____
a) Determine the position of restriction sites in a genome
b) Used in physical mapping
c) Used in genetic mapping
d) Usually occur as multiple alleles in a genome

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

11. What is homozygous?
- 12 Explain test cross
13. What is crossing over?
13. Explain chiasma?
15. Differentiate the OS and CPU
16. What is phylogenetic tree?
17. Define RAPD

SECTION – C (Understanding)

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Write about Mendel experiments in plant (OR)
b) Give short notes on Homozygous and heterozygous
19. a) Describe ABO blood types and its mode of inheritance (OR)

- b) Define the linkage and add the contribution of T.H. Morgan
- 20. a) Give the short notes on sex – linked inheritance (OR)
b) What is mutation? and add it types of mutation
- 21. a) Give the critical notes on bioinformatics (OR)
b) What is database? add it types
- 22. a) Write about genomics (OR)
b) Write about proteomics

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

- 23. Explain the detailed account of law of independent assortment concept using dihybrid cross
- 24. Describe the mechanism of crossing over and its significance
- 25. Write an essay on cytoplasmic male sterility in maize
- 26. Explain BLAST
- 27. Write an essay on polymerase chain reaction (PCR)



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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : Core Subject : Fifth Semester : Paper – I

Course Title: TAXONOMY OF ANGIOSPERMS AND ECONOMIC BOTANY

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

- Bentham and Hooker classified Gamopetalae into
 - Thalamiflorae, Disciflorae and Calyciflorae
 - Inferae, Heteromerae and Bicarpetallae
 - Curvembryae, Unisexuales and Microembryae
 - Thalamiflorae and Microembryae
- Which is considered as a demerit of the 'Engler Prantl' system of classification?
 - Gymnosperms are placed between monocotyledons and dicotyledons
 - Dicotyledons are placed after monocotyledons
 - Dicotyledons are placed before monocotyledons
 - Gymnosperms are placed among dicotyledons
- The substitute for the newly collected specimen when the original type of material is missing in a herbarium is entitled as
 - Holotype
 - Neotype
 - Lactype
 - Isotype
- The application of chemistry to the taxonomy is called
 - Serotaxonomy
 - Cytotaxonomy
 - Chemotaxonomy
 - Numerical taxonomy
- Synandrous condition is common in the family
 - Cucurbitaceae
 - Rutaceae
 - Apiaceae
 - Mimosaceae
- Coriandrum sativum* belongs to the family
 - Rutaceae
 - Meliaceae
 - Apiaceae
 - Brassicaceae
- Which type of inflorescence occurs in family Lamiaceae?
 - Verticillaster
 - Cyathium
 - Catkin
 - Spike
- Spikelet inflorescence present in the
 - Orchidaceae
 - Annoaciae
 - Poaceae
 - Rubiaceae
- Epidermal seed fibres are obtained from
 - Cotton
 - Flax
 - Hemp
 - Coir
- Which is called as 'Golden spice' ?
 - Saffron
 - Cardamom
 - Pepper
 - Turmeric

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- List out the types of stem
- What is phyllotaxy?
- Define spadix inflorescence
- How do you identify the calyx, corolla and perianth?
- Write a systematic position of Cucurbitaceae with suitable plants
- Find out the floral formula of *Oryza sativa* and mention its family
- State the character of spice and condiments

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Write a note on botanical nomenclature (OR)
b) Give a comment on the principles of Bentham and Hooker classification
19. a) Discuss the chemical characters and their uses in chemotaxonomy (OR)
b) Write the important applications and advantages of numerical taxonomy
20. a) Illustrate the floral characteristics of *Azadiracta indica* (Meliaceae) (OR)
b) Summarise the Economic importance of family Rutaceae
21. a) How do you identify the family Asteraceae? Mention its salient features (OR)
b) Explain the floral characteristics of Orchidaceae with a neat diagram
22. a) Discuss the fibres and fibre yielding plants (OR)
b) Explain the steps involved in tea processing

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Give an outline of Bentham and Hooker classification of Angiosperms and write its merits and demerits.
24. Demonstrate the method of preparation and importance of Herbarium
25. Enumerate the salient features of *Annona squamosa* and How do you confirm as a family of Annonaceae?
26. Give a binomical name of any five species of Solanaceae and add a note on its medicinal and economic values.
27. Elaborate the applications of Resins and Gums



Course Code: 08CT52

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : Core Subject : Fifth Semester : Paper – II

Course Title: Plant Physiology

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- Osmosis means
 - Movement of molecules from higher concentration to lower concentration.
 - Uptake of water by roots.
 - Passage of solvent from a weaker solution to stronger solution across a semi-permeable membrane.
 - Passage of solvent from a weaker to a stronger solution separated by semi permeable membrane
- The major element present in the centre of chlorophyll is
 - Ca
 - Mg
 - K
 - P.
- In photosynthesis, light energy is converted into ..
 - Heat energy
 - Chemical energy
 - O₂ and hexose sugar
 - None of the above
- How much energy is released during complete aerobic oxidation of one molecule of glucose?
 - 686 K Cal.
 - 486 K Cal.
 - 586 K Cal.
 - 786 K Cal.
- Conversion of nitrate into ammonia is a
 - Reductive process
 - Oxidative process
 - Amination process
 - None of the above
- Nif gene is control process of
 - Biological nitrogen fixation
 - Nitrate reduction
 - Nitrite reduction
 - None of the above
- Chlorosis of leaves due to nitrogen deficiency begins at first in
 - Unfolding leaves
 - Young leaves
 - Older leaves
 - All of above
- Magnesium is an important components of
 - Chlorophylls
 - Phaeophytin
 - Cytochromes
 - All of above
- Auxins is synthesized mainly in
 - Roots
 - Shoots
 - Meristematic regions of the plant
 - None of the above
- What are the hormones produced as a result of photoperiodic induction?
 - Cytokinin
 - Florigen
 - Vernalin
 - None of the above

SECTION – B

(5 X 2 = 10 Marks)

Answer Any FIVE Questions:

- What is imbibition?
- Short notes on stomata
- Comment on NADH₂
- What is nitrification?
- Define translation
- What is sieve tube?
- Write a note on Gibberellins

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Describe the mechanism of stomatal transpiration and mention the significance of the process
(OR)

b) Differentiate between transpiration and guttation.

19. a) Write critical notes on light reaction

(OR)

b) Give a concise account of glycolysis

20. a) Give an account of biological nitrogen fixation (OR)

b) Give an account of the synthesis of proteins in plants

21. a) Describe the structure and the mechanism of the enzyme action (OR)

b) Write note on Munch hypothesis

22. a) Give a brief account of bioassay of auxins (OR)

b) What is seed dormancy? And add its factors causing dormancy of seeds

SECTION – D (Applying)

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Explain the mechanism of water absorption in plants

24. Give an account of Krebs cycle

25. Describe the β -oxidation pathway of fatty acids

26. Give an account of the specific roles of various essential mineral elements in plants

27. Write an essay on photoperiodism



Course Code: 08CT53

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III: Core Subject: Fifth Semester: Paper – III

Course Title: MICROBIOLOGY

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A (Remembering)

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

- Who was observed bacteria for the first time?
a) Antony von Leeuwenhoek b) Koch c) Jenner d) Pasteur
- The Most common mode of cell division of bacteria is -----
a) Binary fission b) Fragmentation c) Fusion d) Budding
- Dettol is a
a) Sterilent b) Disinfectant c) Antiseptic d) Antifungal agent
- If the source of energy for bacteria is from chemical compounds they are said to be
a) Phototrophs b) Autotrophs c) Chemotrophs d) Chemolithotroph
- Which one is a rapid bacterial growth phase?
a) Log b) Lag c) Lack d) Stationary
- Glucose is an excellent source of-----
a) Vitamin b) Proteins c) Vitamin d) Carbon
- Which kind of Photosystem occurs in Microbes?
a) PS I b) PS II c) PS III d) Either PS I or PS II
- Which one of the microbe is commonly used for lactic acid fermentation?
a) *E.coli* b) *Saccharomyces cerevisiae* c) *Lactobacillus* sp. d) *Bacillus*
- Active immunity is induced by
a) Infection b) Placental transfer of antibodies
c) Injection of gamma-globulins d) Injection of antibodies
- The full form of ELISA is -----
a) Enzyme Linked immunosorbent assay b) Enzyme Linked immunoadsorbent assay
c) Enzyme Linked immunosorbent assess d) Enzyme Linkage immunosorbent assay

SECTION – B (Remembering)

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- Define *In-vitro*.
- Note on Animal cules.
- List out any five name of microbes.
- Define Plasmid
- What is Incipient Nucleus?
- Note on Bioreactor.
- What is Antigenecity?

SECTION – C (Understanding)

Answer ALL Questions:

(5 X 5 = 25 Marks)

- a) Differentiate between prokaryotes and Eukaryotes (OR)
b) Write short notes on contribution of Antony van Leeuwenhoek
- a) How do you prepare culture medium for fungi (OR)
b) What is Antibiotics? List out any five names of antibiotics
- a) Explain briefly about HEPA Filter (OR)
b) Give a short note on chemical sterilization methods with suitable example

21. a) Discuss the microbial fermentation of Lactic acid (OR)

b) Discuss microbial photosynthesis.

22. a) Explain immune system (OR)

b) Illustrate the structure of antibodies.

SECTION – D (Applying)

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Illustrate the ultra structure of Bacteria.

24. Elaborate the Measurement of Bacterial Growth

25. Give an account of Physical methods of control of microorganisms.

26. Describe the industrial production of citric acid.

27. Write an essay on ELISA



Course Code: 08EP51

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – III : ELECTIVE SUBJECT
Under CBCS and OBE – Credit 5

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- Indian system of medicine is _____
a) Ayurvedha and Siddha only b) Homeopathy and only c) Ayurvedha Yoga Unani Siddha Homeopathy d) All are correct
- Siddha system of medicine is originated from _____
a) South India b) North India c) China d) Japan
- _____ is an antioxidant
a) *Atropa belladonna* b) *Cinchona officinalis* c) *Camellia sinensis* d) All of the above
- The dried latex of unripe fruit of papaya is called _____
a) Rennin b) Papain c) Zymine d) All of the above
- What is the melting point of colophony?
a) 80-90°C b) 20-30°C c) 40-50°C d) 75-85 °C
- What is R_f values?
a) Ratio of distance moved by the solute b) Distance travelled by the solvent c) Identify the components by comparison with the reference standard d) All of the above
- What is the name of *Aloe* in Sanskrit?
a) Kumari b) Thazhai c) Gheekanvar d) Lolesara
- What is the binomial name of 'Ammukkara'?
a) *Cassia* b) *Emblia* c) *Withania somnifera* d) *Senna*
- Which one is called as 'senturakam'?
a) *Cassia* b) *Emblia* c) *Carthamus tinctorius* d) *Senna*
- What are the properties of oil of *Carthamus tinctorius*?
a) Eye disease b) Pruritus c) Tridosa d) All are correct

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- Note on pitta
- List out the tridose
- What is ephedrine?
- Give the examples of adulterated food
- What is the source of aloin?
- Explain clove
- Give the botanical name of safflower

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

- a) Write about introduction, history and scope of pharmacognosy (OR)
b) Write about classification of crude drugs
- a) How will you classify alkaloids? (OR)
b) Write down the types of tannins
- a) Write a short notes on collection and processing of crude drugs (OR)
b) List out the evaluation of crude drugs

21. a) Explain chemicals and therapeutics of *Zingiber officinale* (OR)
b) Write about bark and wood of *Cinnamum zeylanicum*
22. a) Describe the properties of *ashwaganda* (OR)
b) Describe the nelli

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Write an essay on AYUSH
24. Describe the classification of phenolic compounds
25. Write an essay on adulteration
26. Enumerate the chemical and therapeutic application of *Santalum album*
27. Explain the salient features of *Aloe vera*



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B.A./B.Sc. Degree (Semester) Examinations, November 2020

Part – IV : NME : First Semester : Paper – I

Course Title: ENERGY RESOURCES

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A (Remembering)

Answer ALL Questions:

(10 X 1 = 10 Marks)

- Common energy sources in Indian villages is
a) Electricity b) Sunlight c) Coal d) Wood and animal dung
- The largest wind farm in India is
a) Jaisalmer wind park, Rajasthan b) Muppandal wind farm, Tamil Nadu
c) Vaspeta wind farm, Maharashtra d) Chakala wind farm, Maharashtra
- Which of the following is a non renewable resource?
a) Coal b) Forest c) Water d) Wildlife
- The most nuclear fuel is generated in the world is
a) Thorium-232 b) Uranium-235 c) Uranium-238 d) Plutonium-239
- Energy in the form of heat and light is obtained by
a) Biomass b) Sun c) Fossil fuels d) Wind
- The amount of electrical energy that can be generated by a hydroelectric power plant depends on
a) Heat of water b) Specific weight of water
c) Quantity of water d) Efficiency of alternator
- Wind energy is harnessed as energy with the help of windmill or turbine
a) Mechanical b) Solar c) Electrical d) Heat
- Tidal energy is a
a) Non-renewable source of energy b) Non conventional source of energy
c) Conventional source of energy d) Continuous source of energy
- Both power and manure is provided by
a) Nuclear plants b) Biogas plants c) Thermal plants d) Hydroelectric plant
- The term biomass most often refers to
a) Inorganic matter b) Organic matter c) Chemicals d) Ammonium compounds

SECTION – B (Remembering)

Answer Any Five Questions:(at least One Question from each Unit)

(5 X 2 = 10 Marks)

- Define energy
- What is solar gadget?
- How to produce the hydro-power?
- List out the name of any four thermal power stations in India
- What is tidal energy?
- Define bioethanol
- State the meaning of lipids and hydrocarbons

SECTION – C (Understanding)

Answer ALL Questions:

(3 X 9 = 27 Marks)

- a) Describe the source of energy in the present world scenario (OR)
- b) Distinguish between conventional and non conventional energy resources
- a) Write a note on sources of conventional energy (OR)

- b) List out the merits and demerits of thermal power plant
20. a) Explain the advantages of solar energy (OR)
- b) Bring out the importance of biodiesel (OR)

SECTION – D

Answer Any Two Questions:

(2 X 14 = 28 Marks)

21. Describe the methods of production of hydro power
22. Give an account of Nuclear energy in detail
23. Demonstrate the production of tidal energy and state its advantages
24. Write a detailed note on Biogas production

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[Affiliated to Madurai Kamaraj University]

B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – IV : SBS/NME : Third Semester : Paper – I

Course Title: Bioinstrumentation

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A**Answer ALL Questions:****(10 X 1 = 10 Marks)**

1. A light microscope is also referred as?
a) Electron microscope b) Compound microscope c) Scanning problem microscope
d) X-ray
2. Micrometry consists of
a) Ocular micrometer b) Stage micrometer c) Both d) None
3. What is the range of pH?
a) 7 b) 14 c) 5 d) 10
4. The pH of acetic acid is _____
a) 7 b) Less than c) More than 7 d) None of the above
5. A centrifuge is a device for separating particles from a solution according to _____
a) Size, shape, b) Density, viscosity c) Medium and rotor speed d) All of the above
6. What are the biological material purified from centrifugation technique?
a) Microbial cells b) Proteins/ Chlorophyll c) DNA /RNA d) All of the above
7. Chromatographic technique was developed by
a) Knoll b) Tswett c) Beer d) Lambert
8. Which compound are hold by stationary phase ?
a) Polar compound b) Non polar compound c) a and b d) None of the above
9. Electrophoretic principles first described by
a) Tiseleus b) Tswett c) Beer d) Lambert
10. Sodium dodecyl sulphate (SDS) used in SDS page
a) An anionic detergent b) A cationic detergent d c) A cation exchanger d) A cation exchanger

SECTION – B)**Answer Any Five Questions:****(5 X 2 = 10 Marks)**

11. What is objective lens?
12. Give the xpansion of TEM and SEM
13. Define the pH Rf value
14. What is Beer's Law?
15. What is pellet?
16. Give the expansion of RNA
17. Give the expansion of HPTLC

SECTION – C**Answer ALL Questions:****(3 X 9 = 27 Marks)**

18. a) Write about the structure of compound microscope with a diagram (OR)
b) Write about the principles of colorimeter
19. a) Write about basic principles of centrifugation (OR)

b) Write about the principles of chromatography

20. a) Explain about solute and solvent (OR)

b) Explain about agar - agar

SECTION – D

Answer Any Three Questions:

(2 X 14 = 28 Marks)

21. Explain in detail about transmission electron microscope with a diagram

22. Write about the principles of pH meter

23. Write an essay on different types of chromatography

24. Describe the principles and types of electrophoresis



Course Code:08SB51

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B.Sc. Botany Degree (Semester) Examinations, November 2020

Part – IV : SBS : Fift Semester

Course Title: MUSHROOM CULTIVATION

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A (Remembering)

Answer ALL Questions:

(10 X 1 = 10 Marks)

1. Soma panam is prepared from
a) *Agaricus* sp. b) *Coprinus* sp. c) *Amanita* sp. d) *Ganoderma* sp.
2. Canning is a process of -----
a) Preservation b) Drying c) Pickling d) Grading
3. Mushroom is a good for ----- patients.
a) Diabetics b) Heart c) Kidney d) Ulcer
4. *Chaetomium olivacearum* causes ----- diseases
a) Olive green mould b) Green mould
c) Bacterial Blotch d) Spring tails
5. Mushroom is commonly known as
a) Meats b) Vegetables c) Vegetable meat d) Non-veg
6. Mushrooms belongs to
a) Club Fungi b) Sacc Fungi c) Both a & B d) Imperfect fungi
7. The mushroom research and training centre is located in India is -----
a) Solan b) Covai c) Punjab d) Ludhiana
8. Shitake mushroom is
a) *Agaricus bisporus* b) *Volvariella* sp. c) *Pleurotus* sp. d) *Lentinus edodes*
9. Which one is commonly called as oyster mushroom?
a) *Agaricus bisporus* b) *Volvariella* sp. c) *Pleurotus* sp. d) *Lentinus edodes*
10. Which one of the following is a most common poisonous mushroom?
a) *Agaricus* sp. b) *Coprinus* sp. c) *Amanita* sp. d) *Ganoderma* sp.

SECTION – B (Remembering)

Answer Any Five Questions:

(5 X 2 = 10 Marks)

11. Comment on Pin Head Stage.
12. What is the full form of DMR?
13. Note on Mushroom city
14. What is pre-cooling?
15. Define canning
16. Short note on White button mushrooms
17. Define Spawn

SECTION – C (Understanding)

Answer ALL Questions:

(3 X 9 = 27 Marks)

18. a) Write about the medicinal values of mushroom with few examples?
(OR)
b) Illustrate the typical structure of mushroom.
19. a) Elaborate the post harvest techniques of mushroom cultivation
(OR)

b) Discuss the mushroom research institutes in India

20. a) Explain briefly about mushroom products

(OR)

b) Give an account of Pest and Diseases Management of Mushrooms

SECTION – D (Applying)

Answer Any Three Questions:

(2 X 14 = 28 Marks)

21. Explain the detailed account of spawn preparation

22. How do you cultivate and harvest oyster mushroom?

23. Explain the commercial values of Mushrooms.

24. Describe the life cycle of *Agaricus* sp.



Course Code: 08AT01

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

Part – III : Allied Subject : Third Semester : Paper – I

Course Title: **PLANT DIVERSITY**

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

1. An algae is growing on snails is called as
(a) Epiphyte (b) Symbiont (c) Endophyte (d) Cryophyte
2. The nannandrium develops from
(a) Alanosphere (b) Zoospore (c) Androspore (d) Hypnospore
3. Fungi usually store the reserve food material in the form of
(a) Starch (b) Lipid (c) Glycogen (d) Protein
4. The fruiting body (ascocarp) of *Penicillium* is
(a) Apothecium (b) Cleistothecium (c) Perithecium (d) Acrostroma
5. The first land inhabitant plants are
(a) Pteridophytes (b) Bryophytes (c) Gymnosperms (d) Angiosperms
6. The antherozoids of *Funaria* are
(a) Uniflagellate (b) Biflagellate (c) Multiflagellate (d) do not have Flagella
7. 'Club moss' belongs to
(a) Fungi (b) Algae (c) Bryophytes (d) Pteridophytes
8. Prothallus represents
(a) Sporophytic phase in a Fern (b) gametophytic phase in a Fern
(c) Sporophytic phase in a Gymnosperm (d) gemetophytic phase in a Gymnosperm
9. Phanerogams without the ovaries are
(a) Angiosperms (b) Pteridophytes (c) Gymnosperms (d) Algae
10. Which of the following is considered as 'living fossil'
(a) *Pinus* (b) *Cycas* (c) *Zamia* (d) *Podocarpus*

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

11. Define Algae?
12. Define Cryptoplast
13. Write the mode of nutrition of fungi
14. Mention the host organism of *Puccinia*
15. Define Bulbils
16. What is Gemmae?
17. Define Gymnosperms

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) List out the characteristics of *Sargassum* Thallus (OR)
b) Elucidate the structure of *Oedogonium* filament
19. a) Explain the Basidiospore stage of *Puccinia* (OR)
b) Illustrate the different types of lichens

20. a) Describe the general characteristics of bryophytes (OR)
b) Discuss the vegetative reproduction of *Funaria*
21. a) Enumerate the internal structure of *Lycopodium* stem (OR)
b) Summarise the different types of prothalli
22. a) Explain the internal structure of leaf (OR)
b) Discuss the structure of *Cycas* ovule

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Elaborate the asexual reproduction of *Nostoc*
24. Describe the sexual reproduction of *Penicillium*
25. Demonstrate the structure of *Funaria* capsule
26. Illustrate the development of sporangiospores in *Lycopodium*
27. Describe the *Cycas* microsporophyll and megasporophyll