VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
(Autonomous & Residential)
[Affiliated to Madurai Kamaraj University]

B.Sc. Botany Degree (Semester) Examinations, November 2016
Part – III : Core Subject : First Semester : Paper – I

ALGAE AND BRYOPHYTES
Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. In which, class of algae chlorophyll *b* is present
   a) Chlorophyceae b) Phaeophyceae
   c) Cyanophyceae d) Rhodophyceae
2. Which one of the following algae serves as a biofertilizer in rice fields?
   a) *Chlamydomonas* b) *Cladophora* c) *Nostoc* d) *Chara*
3. Cap cells are characteristics of
   a) *Oedogonium* b) *Chara* c) *Sargassum* d) *Vaucheria*
4. Synzoospores are found in
   a) *Ultothrix* b) *Calothrix* c) *Cutleria* d) *Vaucheria*
5. Heterocysts are related to
   a) *Nostoc* b) *Polysiphonia* c) *Sargassum* d) *Diatoms*
6. In which alga the cystocarp is formed
   a) *Vaucheria* b) *Ectocarpus* c) *Sargassum* d) *Polysiphonia*
7. Bryophytes grow in habitats that are
   a) Dry b) Moist c) Salty d) Marshy
8. The vegetative reproduction in *Marchantia* is done by
   a) Gemmae b) Archegonium c) Antheridium d) Zoospore
9. In which of the following paraphyses and antheridia occur together
   a) *Riccia* b) *Marchanita* c) *Funaria* d) *Anthoceros*
10. Secondary protonema is found in
    a) *Marchantia* b) *Pellia* c) *Notothylus* d) *Funaria*

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11. a) Explain the beneficial role of algae in agriculture and industries.

(OR)

b) Give an account on harmful aspects of algae in the environment.

12. a) Discuss the characteristics features of *Vaucheria*.

(OR)

b) Describe the general characters and cell structure of diatoms.

13. a) Describe briefly the thallus structure of *Nostoc*.

(OR)

b) Describe the thallus structure of *Sargassum*.

14. a) Outline the classification of Bryophytes with giving suitable examples.

(OR)

b) Give an illustrated account on the internal features of gametophytes in *Anthoceros*.

15. a) Describe the structure of gametophytes of *Funaria*.

(OR)

b) Give an illustrated account of the sporophyte of *Funaria*.

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Describe the different classes of algae as proposed by F..E.Fritsch.
17. Describe the structure and methods of sexual reproduction in *Oedogonium.*
18. Explain the cell structure and life history of *Polysiphonia*.
19. Describe the structure of sporophyte in *Marchantia*.
20. Explain the life the cycle of *Funaria*.

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
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B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Core Subject : Third Semester : Paper - I

FUNGI AND PLANT PATHOLOGY

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : (10 × 1 = 10)

1. Who classified fungi?
   a) Smith b) Alexopoulos c) Chamberlin d) Singh
2. The drug ergotamine is obtained from.
   a) Claviceps purpurea b) Puccinia moniliformis
   c) Puccinia graminis d) Albugo candida
3. The fruit body of Ascomycetes is
   a) Soredium b) Sclerotium
   c) Basidium d) Cleistothecium
4. Albugo belongs to?
   a) Ascomycetes b) Basidiomycetes
   c) Oomycetes d) Zygomycetes
5. Spermatization is found in?
   a) Penicillium b) Stemonites
   c) Agaricus d) Puccinia
6. The protein enriched mushroom is obtained from
   a) Agaricus b) Cercospora
   c) Candida d) Penicillium
7. Lichens are composite organs consisting of algae and_____?
   a) Protozoa b) fungi c) moss d) bacteria
8. _____ is called "reindeer moss".
   a) Parmelia molliuscula b) Usnea barbata
   c) Cladonia rangiferina d) Rocella montaignei
9. Little leaf of Brinjal is caused by.
   a) Virus l b) Mycoplasma
   c) Bacteria d) Fungi
10. Pyricularia causes _____ disease.
    a) Citrus canker b)Bunchytop
    c) Little leaf d) Blast

SECTION – B

Answer ALL Questions : (5 × 7 = 35)

11.a) Explain the classification of fungi and mention the salient features of the classes.

(OR)

b) Give a brief account on negative effects of fungi.

12.a) Describe the somatic structure and asexual reproduction in *Penicillium*.

(OR)

b) Discuss the life cycle of *Stemonites*.

13.a) Explain the symptoms and disease cycle caused by *Cercospora.*

(OR)

b) Explain the structure of basidiocarp of *Agaricus*.

14.a) Explain the internal structure of lichen thallus.

(OR)

b) Write about Soredia and Isidia.

15.a) Write the causal organism, symptoms of Blast of Paddy.

(OR)

b) Write a brief note on citrus canker.

SECTION – C

Answer any THREE Questions : (3 × 10 = 30)

16. Give an account of beneficial role of fungi in industry, medicine and food.
17. Describe the life cycle of *Albugo*.
18. Discuss the life cycle of *Puccinia* in wheat plant.
19. Give an account of sexual reproduction in lichens.
20. Explain the symptoms, causal agent, etiology and control measures of bunchy top of banana.

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B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Core Subject : Third Semester : Paper - I

BIOCHEMISTRY, BIOPHYSICS AND BIOMETRICS

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. Starch is an example for _____.
   a) Monosaccharides b) Oligosaccharides
   c) Disaccharides d) Polysaccharides
2. Waxes belongs to _____.
   a) Lipids b) Protein c) Carbohydrates d) Sugar
3. Which one of the nitrogenous base found in nucleic acids?
   a) D-ribose b) Guanine c) Phosphoric acid d) Pentose
4. Who proposed Lock and Key model for the mechanism of enzyme reaction?
   a) James B Sumner b) Kuhne
   c) Emil Fischer d) Koshland
5. Which one of the organ respiration takes place in a cell?
   a) Chloroplast b) Mitochondria
   c) Nucleus d) Golgi apparatus
6. _____ is the universal currency of free energy in biological system.
   a) ADP b) NAD c) AMP d) ATP
7. Which one of the following is aromatic amino acid?
   a) Asparagine b) Serin c) Valine d) Tyrosine
8. _____ is data that has already been collected by some other investigator or agency and used by an investigator for his purpose.
   a) Primary b) Secondary c) Tertiary d) Quaternary

9. Classification of data on the basis of quality or attribute is called _____.
   a) Spatial b) Chronological
   c) Qualitative d)Quantitative

10. If the rate of emission that is the time between absorption of a photon and emission of a photon is fast it is termed as _____.
   a) Fluorescence b) Phosphorescence
   c) Bioluminescence d) Inflorescence

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11.a) Illustrate the structure and characteristics of monosaccharides.

(OR)

b) Discuss the physical and chemical properties of lipids.

12.a) Analyse the four structural level of proteins.

(OR)

b) What are the properties of amino acids.

13.a) Write short notes on i) Enthalpy and ii) Entropy

(OR)

b) What is meant by redox potential? Explain.

14.a) Bring down the characteristics of bioluminescence.

(OR)

b) Comment on action spectra.

15.a) What are the general rules for construction of table and its types.

(OR)

b) How do you interpret your data?

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Describe the structure of DNA and different types of RNA.

17. Discuss the IUB system of enzyme classification with suitable examples for each class.

18. Explain the chloroplast bioenergytics.

19. Give a brief account on absorption spectrum and plant pigments.

20. Calculate the mean and standard deviation from the data recorded on respiration rate per minute of 10 persons.

    Respiration/ minute : 22 ,22, 20, 24, 16, 17, 18, 19, 21, 21

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B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Core Subject : Third Semester : Paper – II

CELL BIOLOGY & EMBROLOGY

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. The living substance of the cell is?
   a) Protoplasm b) Nucleoplasm
   c) Cytoplasm d) Hyaloplasm
2. Within the cell, the site of respiration is the
   a) Golgi bodies b) Ribosome's
   c) Mitochondria d) Nucleolus
3 DNA doubles during
   a) Interphase b) Prophase c) Metaphase d) Telophase
4. Meiosis takes place in?
   a) Apical meristem b) Intercalary meristem
   c) Reproductive cells d) Vegetative cells
5. The fibrous thickening of endothecium is largely made up of?
   a) Lignin b) Suberin c) Cutin d) Cellulose
6. The Ubisch bodies in anther is produced in?
   a) Epidermis b) Endothecium c) Middle layer d) Tapetum
7. In lamiaceae, the type of inflorescence is?
   a) Panicle b) Verticillaster c) Thyruses d) Raceme
8. Fertilization in the flower occurs within the
   a) Ovule b) Style c) Anther d) Pollen tube
9. An endosperm having irregular boundaries is called as?
   a) Nulcear b) Cellular c) Helobial d) Ruminate
10. Endopserm is an angiosperm in a tissue which is generally.
    a) Diploid b) Triploid c) Haploid d) Polyploid

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11.a) Draw and describe the Ultra structure of plant cell.

(OR)

b) Give a brief notes on endoplasmic reticulum.

12.a) Mention the significance of meiosis.

(OR)

b) Explain about the prophase of mitosis.

13.a) Give an account on microsporogeneis.

(OR)

b) Explain the structure of microsporangium.

14.a) Give an account on fertilization.

(OR)

b) Explain the structure of megasporangium.

15.a) Give an account on nuclear and helobial endosperm.

(OR)

b) Explain the structure and development of monocot embryo.

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Give and account on the structure and functions of Mitochondria.
17. With neat diagram explain the stages of mitosis.
18. Trace the various stages found in the development of male gametophytes.
19. Give an account on megasporogeneis.
20. Trace the development stages of dicot embryo.

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B.Sc. Botany Degree (Semester) Examinations, November 2016
Part – III : Core Subject : Fifth Semester : Paper – I

TAXONOMY OF ANGIOSPERMS & ECONOMIC BOTANY
Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. Who proposed the natural system of classification?
   a) Carolus Linnaeus b) John Hutchinson
   c) Bentham and Hooker d) Oswald Tippo
2. Most of the biological names have been derived from
   a) Latin b) English c) German d) Sanskrit
3. The largest herbarium of the world is located at
   a) Geneva b) Berlin c) Newyork d) Kew
4. The chemotaxonomy is a classification of plants based on their _____ of plants.
   a) chemical constituents b) floral characters
   c) leaf characters d) inflorescence characters
5. The Obdiplostemonous condition of androecium is common in the family of
   a) Anacardiaceae b) Rubiaceae c) Rosaceae d) Rutaceae
6. Usual fruit in the cucurbitaceae is
   a) Pome b) Pepo c) Samara d) Hesperidium
7. In lamiaceae, the type of inflorescence is
   a) Panicle b) Verticillaster c) Thyruses d) Raceme
8. The inflorescence of paddy is
   a) Racemose b) Catkin c) Spikelet d) Verticillaster
9. The botanical name of the cotton is
   a) *Gossypium* b) *Corchorus* c) *Phaseolus* d) *Hibiscus*
10. Botanical name of Tea is
    a) *Comellina sinensis* b) *Commellina* bengalensis
    c) *Comellina indica* d) *Commellina varigatum*

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11. a) State any two merits and demerits of natural system of classification.

(OR)

b) Write short notes on rules of botanical nomenclature.

12. a) Outline the scope, usefulness and limitation of chemotaxonomy.

(OR)

b) Write short notes on numerical taxonomy.

13. a) Explain the floral characters of Rutaceae.

(OR)

b) State the distinguishing characters of Annonaceae.

14. a) Explain the floral characters of Euphorbiaceae.

(OR)

b) Enumerate the economic importance of Poaceae.

15. a) Enlist the economic importance of any two fibre yielding plant.

(OR)

b) Write the economic importance of spices and condiments.

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Is Bentham and Hooker's system of a natural system of classification? Explain.
17. Discuss the role of herbaria in modern taxonomical research.
18. Give the salient features of the family cucurbitaceae and its economic importance.
19. Why the Asteraceae are regarded as the most highly evolved taxon?
20. Explain the various processes and extraction of tea in tea industry.

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B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Core Subject : Fifth Semester : Paper - II

PLANT PHYSIOLOGY

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. If a cell swells in a specific solution, the solution is _____.
   a) Isotonic b) Hypotonic c) Hypertonic d) Normal
2. Seeds are swelling when placed in water because of.
   a) Osmosis b) Diffusion c) Imbition d) Plasmolysis
3. Which of the following is uncontrolled process?
   a) Transpiration b) Guttation
   c) Respiration d) Photosynthesis
4. Minerals absorbed by roots move to the leaves through
   a) Phloem b) Sieve tube c) Xylem d) Companion cells
5. 'Z' scheme of photosynthetic electron transport was discovered by _____ ?
   a) Robert Hill b) Kok et al., c) Hill & Bendall d) Van–Niel
6. Kranz type of anatomy is shown by.
   a) C_3 plants b) C_4 plants c) CAM plants d) C_2 plants
7. Which one of the following heme protein serve as electron carrier in both respiration and photosynthesis.
   a) Phytochrome b) Ferredoxin
   c) Cytochrome d) Cryptochrome
8. The net gain of energy from one molecule of glucose during aerobic respiration in eukaryotes is.
   a) 32 ATP b) 34 ATP c) 36 ATP d) 38 ATP
9. Apical dominance phenomenon is caused by.
   a Auxin b) GA c) Cytokinin d) ABA
10. Which one is used for artificial ripening of banana.
    a) Auxin b) Cytokinin c) Ethylene d) Coumarin

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11.a) Discuss the mechanism of absorption of water.

(OR)

b) Write short note on
i) Osmosis and ii) Plasmolysis.

12.a) Illustrate the step wise reactions of Glycolysis with flow chart.

(OR)

b) Give a brief account on photorespiration.

13.a) What is meant by beta oxidation of fatty acids?

(OR)

b) Explain the mechanism of biosynthesis of fatty acids.

14.a) List down the macro elements and their functions.

(OR)

b) Discuss the competitive substrate enzyme inhibition and non-competitive enzyme inhibition.

15.a) Analyse the characteristics and mechanism of vernalization.

(OR)

b) What are the factors responsible for seed dormancy?

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Explain transpiration, structure of stomata, types and significance of transpiration.
17. Describe calvin cycle.
18. Discuss the mechanism of protein synthesis.
19. Out line the mechanism of absorption of mineral salts.
20. Elaborate the physiological roles of cytokinin.

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B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Core Subject : Fifth Semester : Paper – III

MICROBIOLOGY

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : (10 × 1 = 10)

1. When a tuft of flagella are located on one polar end of the bacterial cell it is called?
   a) Atrichous b) Amphitrichous
   c) Lophotrichous d) Monotrichous
2. Bacteria which grow in the absence of oxygen are called as _____.
   a) Aerobic b) Anaerobic c) Facultative d) Obligate
3. Which of the following does not produce oxygen as a product of photosynthesis?
   a) Purple sulfur bacteria b) Phytoplankton
   c) Oak d) Pinus
4. _____ are hair like appendages found on the surface of cell wall of bacteria?
   a) Flagella b) Pili c) Endospore d) Capsule
5. In the exponential phase, the cells and cell mass_____.
   a) First increases then decreases b) Decreases
   c) Constant d) Double at a constant rate
6. The class of immunoglobulins which can cross the placenta is _____.
   a) IgM b) IgG c) IgA d) IgD
7. Gram staining was developed by _____.
   a) Carolus Clusivs b) Christian gram c) Herelle d) Stanely
8. Milk is pasteurized in batch method by keeping it at____.
   a) 63°C for 30min b) 72°C for 60sec
   c) 73°C for 30min d) 72°C for 6min
9. Which of the following material is sterilized by use of red heat _____.
   a) Soiled dressing b) Inoculating wires and loops
   c) Glass slides d) Glass syringe
10. Who is the father of immunology?
    a) Edward Jenner b) Louis Pasteur
    c) Robert Koch d) A. Flemming

SECTION – B

Answer ALL Questions : (5 × 7 = 35)

11.a) Explain the structure of cyanobacteria.

(OR)

b) Describe the structure and characteristics of yeast.

12.a) Enlist the various chemical agents utilized in the process of sterilization.

(OR)

b) Comment on antibiotics.

13.a) How do you measure the growth of bacteria in terms of cell number.

(OR)

b) Describe the nutritional requirements of culture media for microbes.

14.a) Analyse the pathway of reverse TCA cycle.

(OR)

b) Discuss about lactic acid fermentation process.

15.a) Write a brief account on lymphoid organs.

(OR)

b) Enlist the various types of immunoglobulins.

SECTION – C

Answer any THREE Questions : (3 × 10 = 30)

16. Illustrate the structure of a bacterial cell.
17. Discuss about the various physical methods of sterilization.
18. Explain a typical bacterial growth curve and the factors that affect the bacterial growth.
19. Analyze the light reactions of purple sulfur and purple non-sulfur bacteria.
20. Give a brief account on antigen – antibody reaction.

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
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B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Allied Subject : Fifth Semester : Paper – I

MEDICINAL BOTANY

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. Dhanvantari is known as the father of_____?
   a) Ayurveda b) Siddha c) Unani d) Homeopathy
2. The evaluation of drugs based on impressions on organs is known as _____.
   a) Chemical b) Physica c) Organoleptic d) Biological
3 The alkaloid morphine is obtained from _____.
   a) *Papaver somniferum* b) *Catharanthus*
   c) *Calviceps* d) *Areca*
4. Foods rich in _____ is used in the treatment of (HFE) hereditary hemochromatosis?
   a) Gums b) Alkaloids c) Phenols d) Tannins
5. The literature of Siddha system is mostly in _____ language?
   a) Sanskrit b) Telugu c) Malayalam d) Tamil
6. The physical method of evaluation of crude drug is _____.
   a) Chromatography b) Alkaloids
   c) Hypoglycaemic d) Antiferticity
7. *Emblico officinalis* is commonly known as_____?
   a) Nelli b) Sothukathalai c) Ashwaganda d) Vilvam
8. *Aloe vera* belongs to the family _____.
   a) Sapotaceae b) Liliaceae c) Malvaceaed d) Tiliaceae
9 Jatimaram is the common name of_____.
   a) *Cassia senna* b) *Santalum album*
   c) *Myristica fragrans* d) *Zingiber*
10. In *Cassia senna*, _____ is the medicinally useful part.
   a) Stem b) Bark c) Leaves d) Wood

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11.a) Bring out the Paramacological classification of crude drugs.

(OR)

b) Classify the crude drugs based on their chemical constituents.

12.a) Comment on Tannins.

(OR)

b) Discuss about the medical uses of gums.

13.a) Explain in detail about drug adulteration and its types.

(OR)

b) Explain the collection and harvesting process of crude drugs in detail.

14.a) Briefly explain the medicanal uses and morphology of useful parts of *Ferula asafoetida*.

(OR)

b) Enlist the uses of *Santalum album*.

15.a) Discuss about the cultivation, processing and uses of *Aloe vera*.

(OR)

b) Write about the medicinal uses of *Emblica officinalis*.

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Discuss about the Indigenous system of medicine.
17. Comment on Alkaloids.
18. How do you evaluate the drugs by biological methods.
19. Describe the morphology and uses of *Zingiber officinale* and *Aegle marmelos*.
20. Give a detailed account on the chemical constituents and uses of *Withania somnifera*.

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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Affiliated to Madurai Kamaraj University

B.A. / B.Sc. Degree (Semester) Examinations, November 2016
Part – IV : Non Major Elective Subject : First Semester : Paper – I

ENERGY RESOURCES

Under CBCS – Credit 2

Time: **2** Hours Maximum Marks: **75**

SECTION – A

Answer ALL Questions: **(10 × 1 = 10)**

1. Iron and Gold are example of
   a) Renewable b) Non- Renewable c) Conventional d) Both a & c
2. Smelling agent in LPG
   a) Mercapten b) Napthalene c) Phenol d) All
3. Which is a major constituent of Natural Gas?
   a) Co_2 b) CH_3 c) H_2S d) CO
4. The carbon content of Lignite is _____ %
   a) 80 b) 70 c) 60 d) 50
5. How many Thermal power stations are present in Tamil Nadu?
   a) 4 b) 2 c) 5 d) 6
6. Biomass energy.
7. Tidal Power.
8. OPEC.
9. Wood.
10. Hydro Power.

SECTION – B

Answer ALL Questions: **(4 × 10 = 40)**

11. a) Compare Conventional and non - Conventional energy resources. **(OR)**
    b) Discuss – Wood is a renewable energy sources.
12. a) What is Natural Oil? Write about its various fractions. **(OR)**
    b) What is Coal? Give its different types.
13. a) What is wind energy? Write its merits and demerits. **(OR)**
    b) What are the advantage and disadvantage of solar energy?
14. a) What is LPG? Write about it? **(OR)**
    b) Give an account of biodiesel and its producing Plants.

SECTION – C

Answer Any TWO Questions: **(2 × 12½ = 25)**

15. Give an account of nuclear energy? Discuss its two types of reaction.
16. What is biogas? Discuss the structure and function of biogas plant.
17. Write an account of Bioethanol production?

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B.Sc. Botany Degree (Semester) Examinations, November 2016
Part – IV : Skill Based Subject : Third Semester : Paper – I

BIOINSTRUMENTATION

Under CBCS – Credit 2

Time: **2** Hours Maximum Marks: **75**

SECTION – A

Answer ALL Questions: **(10 × 1 = 10)**

1. Which of the following microscopy is used for detection of macromolecules labeled fluorescent component
   a) Phase contrast microscope b) Interference microscope
   c) Fluorescence microscope d) Polarizing microscope
2. The bulb of calomel electrode is filled with _____.
   a) KCl b) HCl c) AgCl d) none
3. Which techniques is used for the separation of biochemical mixture
   a) centrifugation b) chromatography c) electrophoresis d) all the above
4. The centrifugal field is described in terms of _____.
   a) angular velocity b) gravitational pull c) relative centrifugal field d) rpm
5. The electrophoretic techniques was first developed by
   a) Tiselvis and Longsworth b) Klebs b) Jenssen and Hans d) Max Knoll
6. Microscopy.
7. SEM.
8. pH meter.
9. Sedimentation co-efficient.
10. Electrophoresis.

SECTION – B

Answer ALL Questions: **(4 × 10 = 40)**

11. a) Give an account of Phase contrast microscope. **(OR)**
    b) Write notes on micrometry.
12. a) Write about working principles of colorimeter. **(OR)**
    b) Give an account of methods of centrifugation.
13. a) Describe the applications of analytical ultra-centrifuge. **(OR)**
    b) Write short note on chromatographic techniques.
14. a) Explain about principles and significance of thin layer chromatography (TLC). **(OR)**
    b) Write short note on electrophoretic methods.

SECTION – C

Answer Any TWO Questions: **(2 × 12½ = 25)**

15. Write an essay on transmission electron microscopy (TEM).
16. Give an account of column chromatography.
17. Explain the detailed account of polyacrilamide gel electrophoresis (PAGE).

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B.Sc. Botany Degree (Semester) Examinations, November 2016
Part – IV : Skill Based Subject : Fifth Semester : Paper – I

MUSHROOM CULTIVATION

Under CBCS – Credit 2

Time: **2** Hours Maximum Marks: **75**

SECTION – A

Answer ALL Questions: **(10 × 1 = 10)**

1. The mushroom research and training centre is located in India is
   a) Solan b) Covai c) Punjab d) Ludhiana
2. Which is commonly called as Button mushroom?
   a) *Agaricus bisporus* b) *Volvariella* sp. c) *Amanita* sp. d) *Lentinus edodes*
3. The most common poisonous mushroom
   a) *Agaricus bisporus* b) *Volvariella* sp. c) *Amanita* sp. d) *Lentinus edodes*
4. Which chemical agent is used for spawn preparation?
   a) Calcium carbonate b) Calcium nitrate c) Calcium chloride d) Both a & b
5. The antitumor agent Lentinan is obtained from _____.
   a) *Agaricus bisporus* b) *Volvariella valvacea* c) *Amanita muscaria* d) *Lentinus edodes*
6. The best source for spawn preparation is
   a) Rice b) Husk c) Black gram d) Seeds of sorghum
7. Mushroom fly is commonly called as
   a) Phorids b) Virions c) Viriods d) All
8. Carbendazim is a
   a) Pesticide b) Fungicide c) Both a & b d) All
9. Green mould is caused by
   a) *Fusarium* b) *Trichoderma* c) *Aspergillus* d) *Colletotricum*
10. How many days are required for first harvest in mushroom cultivation?
    a) 15 b) 20 c) 18 d) 19

SECTION – B

Answer ALL Questions: **(4 × 10 = 40)**

11. a) Draw the structure of Fruiting bodies of mushrooms? **(OR)**
    b) Write Short notes on i) Fungi ii) Formalin
12. a) Write about spawn preparation procedure. **(OR)**
    b) Differentiate micro fungi from macro fungi.
13. a) Explain the life cycle of *Agaricus* sp. **(OR)**
    b) Write short notes on growth media of mushroom.
14. a) How to control pest and diseases of mushrooms? **(OR)**
    b) How to prepare Mushroom gravy?

SECTION – C

Answer Any TWO Questions: **(2 × 12½ = 25)**

15. Give an account of Nutritional and medicinal values of mushrooms.
16. Give detailed account of mushrooms cultivation?
17. Describe- life cycle of *Pleurotus* sp.

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
(Autonomous & Residential)
[Affiliated to Madurai Kamaraj University]

B.Sc. Botany Degree (Semester) Examinations, November -2016
Part – III : Ailled Subject : Third Semester : Paper - I

PLANT DIVERSITY

Under CBCS – Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions : **(10 × 1 = 10)**

1. The specialized thick walled cells present in Nostoc is called?
   a) Auxosome b) Heterocyst c) Capsule d) Endospore
2. Fertile branches of *Sargassum* are called.
   a) Receptacles b) Conceptacle
   c) Paraphyses d) Periphyses
3. Which of the following is macrocyclic fungus
   a) *Albugo candida* b) *Penicillium notatum*
   c) *Penicillium chrysogenum* d) *Puccinia graminis*
4. The algal component in the lichen is known as
   a) Composite b) Haustoria
   c) Phycobiont d) Mycobiont
5. Mature archegonial neck of Funaria consists of
   a) 8 - 12 cells b) 12 - 14 cells
   c) 4 - 8 cells d) 14 - 16 cells
6. The apical portion of *Fanaria* capsule has a cup shaped structure, called
   a) Peristome b) Theca c) Annulus d) Operculum
7. Lycopodium is ?
   a) homosporous b) heterosporous
   c) isoporous d) eusporous
8. Mixed protostele is found in
   a) *Lycopodium serratum* b) *Lycopodium phlegmaria*
   c) *Lycopodium cernum* d) *Lycopodium volubile*
9. Coralloid roots are found in.
   a) *Lycopodium* b) *Funaria* c) *Pinus* d) *Cycas*
10. Cycas ovule is.
    a) Anatropous b)Orthotropous
    c) Campylotropous d) Hemianatropous

SECTION – B

Answer ALL Questions : **(5 × 7 = 35)**

11.a) Draw and describe structure of Nostoc and reproduction.

(OR)

b) Describe the internal structure of stem and leaf of *Sargassum*.

12.a) Discuss the morphology of lichen thallus.

(OR)

b) Give a brief account on asexual reproduction in *Penicillium*.

13.a) Explain the antheridia of *Funaria.*

(OR)

b) Discuss the archeogonia of *Funaria*.

14.a) Give a brief account on sporophytic plant body of *Lycopodium*.

(OR)

b) Discuss the anatomy of stem of *Lycopodium*.

15.a) Discuss the male and female cones of *Cycas*.

(OR)

b) Give a brief account on anatomy of *Cycas* rachis.

SECTION – C

Answer any THREE Questions : **(3 × 10 = 30)**

16. Discuss the sexual reproduction in *Sargassum*.
17. Explain in detail about the life cycle of *Puccinia* in wheat plant.
18. Write an essay on sporophyte of *Funaria* with suitable diagram.
19. Discuss the three types of gametophyte of *Lycopodium*.
20. Give an account of development of female gametophyte of *Cycas*.

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