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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Core Subject : First Semester : Paper – I

ALGAE AND BRYOPHYTES

Under CBCS - Credit 4Time: 3 HoursMax. Marks: 75

$\underline{SECTION} - \underline{A}$

(10	×	1	=	10)

- Phycology is the study of
 a) Fungi
 b) Algae
 c) Embryo
 d) All of the above
- 2. Oogamy gametes are having
 - a) Equal sizes
 - b) Unequal sizes

Answer ALL Ouestions :

- c) One is permanent another one is swimming
- d) All are correct
- 3. Which one of the following is yellow green algae?
 - a) Oedogonium b) Sargassum c) Vaucheria d) Chlorella
- 4. Coenocytic nuclei means for
 - a) Presence of many nuclei in cytoplasm b) There is no cell wall
 - c) Cytoplasmic streaming d) All of the above
- 5. Sargassum thallus looks like
- b) Monocots
- d) None of the above
- 6. Prokaryotic class of algae is _____
 - a) Xanthopyceae

c) Gymnosperms

a) Dicots

c) Rhodophyceae

- b) Chlorophyceae
- d) Cyanophyceae

7. Anthocerous mostly called as

a) Stoneworts b) Liverworts c) Thornworts d) Hornworts

8. In Marchantia, sporophyte contains,

a) Foot only		b) Seta only	
c) Capsule only		d) All are pr	resent
9. How many peris	tome teeth four	nd in <i>Funaria</i> ?	
a) 31	b) 30	c) 32	d) 33
10. The spores of $F\iota$	<i>inaria</i> are germ	ninating into	
a) Sporophyte	b) Buds	c) Calyx	d) Protonema

<u>SECTION – B</u>

Answer any FIVE Questions :

11. What is chlorellin?

12. What cap cells?

13. What is cystocarp?

14. What are akinetes?

15. What are hornworts? Give example.

16. What are conceptacles?

17. What is protonema?

<u>SECTION – C</u>

Answer ALL Questions :

 $(5 \times 5 = 25)$

 $(5 \times 2 = 10)$

18.a) Briefly discuss the beneficial role of algae in the fields of agriculture and industry.

(**OR**)

b) Elucidate the general characteristics of algae.

19. a) Describe the habitat and the vegetative structure of *Vaucheria* thallus.

(OR)

b) Explain the auxosopore formation i	n pennate diatoms.
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20. a) Explain the sexual reproduction of Sargassum.

(**OR**)

b) Explain the occurrence and vegetative structure of Nostoc colony.

21.a) Describe the methods of vegetative reproduction of Anthoceros.

(**OR**)

b) Outline the Smith's classification of Bryophytes.

22. a) With the help of suitable diagram describe the structure of capsule of *Funaria*.

(**OR**)

b) Describe the external and internal features of an adult gametophyte of *Funaria*.

<u>SECTION – D</u>

Answer any THREE Questions :

 $(3 \times 10 = 30)$

- 23. Bring out classification of algae proposed by Fritsch.
- 24. Give a detailed account on the structure and reproduction of Oedogonium.
- 25. With suitable sketches explain the sexual process of Polysiphonia.
- 26. Describe the development, structure, dispersal and germination of gemma in *Marchantia*.
- 27. Explain the sexual reproduction in Funaria.



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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Core Subject : First Semester : Paper – II

FUNGI AND PLANT PATHOLOGY

Under CBCS – Credit 4

Time: 3 HoursMax. Marks: 75

<u>SECTION – A</u>

$(10 \times 1 = 10)$

1. Ergonovine alkaloid is used for the treatment of

a) Tuberculosis

Answer ALL Questions :

b) Cancer

- c) Uterine contraction and haemorrhages
- d) Vascular diseases and Skin diseases
- 2. Penilcillium notatum belongs to this class of
 - a) Ascomycetes b) Protosteliomycetes
 - c) Basidiomycetes d) Zygomycetes
- 3. When will form the eight daughter nuclei in Ascus mother cell in the sexual reproduction of *Penicillium*?
 - a) Undergoes mitosis b) Undergoes meiosis

c) Undergoes mitosis and meiosis d) None of the above

- 4. Famous mycologist in India
 - a) Maheswari b) M.O.P. Iyengar c) Sharma d) Sadasivan
- 5. Telial stage of rust fungus of wheat reported in this host
 - a) Alternate host b) Primary host
 - c) Collateral host d) Secondary host

6. Monoka	ryotic my	celium is found in		
a) Prim	ary host	b) Sec. host	c) Both	d) Tertiary host
7. Which o	of the foll	owing is Ascoliche	n?	
a) Parn	nelia	b) <i>Penicillim</i> sp.	c) Albugo sp.	d) Trichoderma
8. Lichens	are the co	ombination of		
a) Alga	e & Bryo	phytes	b) Algae & Fu	ıngi
c) Fung	gi & Bryo	phytes	d) Fungi & Pt	eridophytes
9. Effectiv	e fungicio	le for the control of	f blast disease o	of Rice
a) Man	cozeb	b) Tricyclazole	c) Fosteyl Al	d) Plantvax
10. The hos	t plant of	Bunchy top of Ban	ana is	
				1) G 1

a) Musa b) Pyricularia c) Citrus d) Solanum

<u>SECTION – B</u>

Answer any FIVE Questions :

 $(5 \times 2 = 10)$

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11. Write the fungi used as a medicine.

- 12. Define conidiophores.
- 13. Write notes on uredo and teleutospores.
- 14. Comment on apothecium.
- 15. What is the casual agent of bunchy top of banana?
- 16. Describe the structure of basidiocarp.
- 17. Differentiate phycobiont from mycobiont.

<u>SECTION – C</u>

Answer ALL Questions :

18.a) Explain the industrial applications of fungi with suitable examples.

(**OR**)

b) Summarize the harmful activities of fungi.

19.a) Expound the asexual reproduction of *Pencillium*.

(**OR**)

b) Explain the thallus structure of Stemonitis.

20. a) Explain the vegetative structure of Agaricus.

(**OR**)

b) Summerize the structure of *Cercospora*.

21.a) Illustrate the internal structure of lichen thallus.

(OR)

- b) Explain the economic importance of lichens.
- 22.a) Summarize the pathogenesis of bunchy top of banana.

(**OR**)

b) Write the casual organism and control measures of little leaf of brinjal.

<u>SECTION – D</u>

Answer any THREE Questions :

 $(3 \times 10 = 30)$

- 23. Construct the classification of fungi by Alexopoulos.
- 24. Organize the life cycle of white rust fungi.
- 25. Write the life history of Puccinia.
- 26. Construct the sexual reproduction in lichens.
- 27. Organize the symptoms, etiology, casual organism and control measures of citrus canker.

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 $(5 \times 5 = 25)$



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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Core Subject : Third Semester : Paper – I

BIOCHEMISTRY, BIOPHYSICS AND BIOMETRICS

	Under CDCS - Credit 4	
Time: 3 Hours		Max. Marks: 75

<u>SECTION – A</u>

nswer ALL Que	<u>stions</u> :		$(10 \times 1 = 10)$
. Non reducing sug	gar is		
a) Sucrose	b) Fructose	c) Maltose	d) Glucose
. Which of the foll	owing types of RN	A is known for	its catalytic
abilities?			
a) dsRNA	b) mRNA	c) rRNA	d) tRNA
. Zwitter ion carrie	es		
a) Positive electr	ric charge	b) Negative el	ectric charge
c) Both 'a' and '	b'	d) None of the	e abov
. The enzymes whi	ich operate external	lly to the cells a	re called as
a) Exoenzymes		b) Extra cellul	lar enzymes
c) Exocellular er	nzymes	d) All of abov	e
. Glycolysis takes	place in		
a) Cytoplasm	b) Mitochondria	c) Nucleus	d) Ribosome
. There is reduction	n as well as oxidati	on during photo	osynthesis hence
called as			
a) Redox proces	S	b) Oxidative r	reaction
c) Reduction		d) Neutral pro	cess
	 nswer ALL Ques Non reducing sug a) Sucrose Which of the foll abilities? a) dsRNA Zwitter ion carried a) Positive electric c) Both 'a' and ' The enzymes white a) Exoenzymes c) Exocellular ending Glycolysis takes a) Cytoplasm There is reduction called as a) Redox proces c) Reduction 	nswer ALL Questions : Non reducing sugar is a) Sucrose b) Fructose Which of the following types of RN abilities? a) dsRNA b) mRNA Zwitter ion carries a) Positive electric charge c) Both 'a' and 'b' The enzymes which operate external a) Exoenzymes c) Exocellular enzymes c) Exocellular enzymes Glycolysis takes place in a) Cytoplasm b) Mitochondria There is reduction as well as oxidati called as a) Redox process c) Reduction	nswer ALL Questions : . Non reducing sugar is a) Sucrose b) Fructose c) Maltose . Which of the following types of RNA is known for abilities? a) dsRNA b) mRNA c) rRNA . Zwitter ion carries a) Positive electric charge b) Negative electric charge c) Both 'a' and 'b' d) None of the cells at a) Exoenzymes b) Extra cellul c) Exocellular enzymes d) All of above c) Glycolysis takes place in a) Cytoplasm a) Redox process b) Mitochondria c) Reduction d) Neutral process

7. Instrument used to measure the ability of pigment to absorp the light is called

a) Thermometer	b) Spectrophotometer
c) Hydrometer	d) Galvanometer

- 8. _____ is the universal currency of free energy in biological system
 - a) ADP b) NAD c) AMP d) ATP
- 9. Mean, Median and Mode are
 - a) Measures of deviation b) Ways of sampling
 - c) Measures of control tendency d) Measures of central tendency
- 10. The result of a statistical test, denoted "p" shall be interpreted as follows
 - a) The null hypothesis H0 is rejected if p <0.05
 - b) The null hypothesis H0 is rejected if p >0.05
 - c) The alternate hypothesis H1 is rejected if p> 0.05
 - d) The null hypothesis H0 is accepted if p <0.05

SECTION – B

 $(5 \times 2 = 10)$

Answer any FIVE Questions :

- 11. Explain monosaccharides with examples.
- 12. Illustrate the structure of RNA.
- 13. Recall iminoacids.
- 14. State about free energy.
- 15. Define action spectrum.
- 16. Enlist the types of biological pigments.
- 17. List down the parts of ideal table.

SECTION – C

Answer ALL Questions :

 $(5 \times 5 = 25)$

18.a) Relate D and L sugars.

(**OR**)

b) Distinguish between purines and Pyrimidines.

19.a) Discuss the general structure and properties of aminoacids.

(**OR**)

b) Highlight the functions of proteins.

20.a) Rephrase enthalpy with suitable example.

(OR)

b) Interpret the First law of thermodynamics.

21.a) Summarize the significance of photochemical reaction.

(OR)

b) Bioluminescence occurs widely in marine vertebrates, invertebrates and in some fungi – Justify.

22.a) State about mean and median.

(OR)

b) Classify the types of data and add a note on it.

<u>SECTION – D</u>

Answer any THREE Questions :

 $(3 \times 10 = 30)$

- 23. Elaborate on the types of lipids with suitable examples.
- 24. Classify enzymes and add a note on their components.
- 25. Describe the mechanisms involved in bioenergetics.
- 26. Define Fluorescence. Explain the effect of structural rigidity, temperature and pH on fluorescence.
- 27.Calculate mean, median and mode for the following data : 59, 65, 61, 62, 53, 55, 60, 70, 64, 56, 58, 58, 62, 62, 68, 65, 56, 59, 68, 61, 67.



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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Core Subject : Third Semester : Paper – II

GENETICS & BIO INFORMATICS

Under CBCS – Credit 4 Time: **3** Hours

Max. Marks: 75

<u>SECTION – A</u>

Answer ALL Questions :

 $(10 \times 1 = 10)$

- 1. Law of dominance and recessiveness were the result of
 - a) Back cross b) Incomplete dominance
 - c) Epistasis d) Monohybrid cross

2. In *Mirabilis jalapa*, RR, Rr and rr determine red, pink and white colours respectively. When F1 hybrid of rRR and rr was crossed with dominant parent, the ratio produced is

- a) All redb) 2 Red: 2 Pinkc) All whited) 2 Pink: 2 White
- 3. Linkage was discovered by

a) Rumex

a) Biparentally

c) Paternally

- a) Bateson b) Sutton c) Muller d) Blakeslee
- 4. Sex determination was first studied in this plant

b) Datura c) Melandrium d) Mirabilis

- 5. Cytoplasmic male sterility is passed down
 - b) Maternally
 - d) Through bacteriophage
- 6. The first draft of human genome project (HGP) was published in 2001 in the journal of
 - a) Science b) Cell c) Nature d) Plos Biology

7. Each record in a database is called an

a) Entry	b) File	c) Record	d) Ticket
8. NCBI was establi	shed in		
a) 1988	b) 1989	c) 1990	d) 1991
9. The term proteon	ne was coined by _		•
a) Marc Wilkins	b) Maxim	c) Sangers	d) Logan
10. Human genomes	contain about		
a) 6 billion genes		b) 10,000 nucleotides	
c) 10,000 billion genes		d) 6 billion nucleotides	

<u>SECTION – B</u>

Answer any FIVE Questions :

- 11. What is meant by Epistasis?
- 12. How will you differentiate monohybrid ratio and dihybrid ratio?
- 13. Define multiple allilism.
- 14. Spell out the genes involved in the regulation of gene expression in prokaryotes.
- 15. Why plastid inheritance is so special when compared to cytoplasmic inheritance?
- 16. List down the names of any two databases.
- 17. What is the contribution of Kary Banks Mullis?

<u>SECTION – C</u>

Answer ALL Questions :

 $(5 \times 5 = 25)$

 $(5 \times 2 = 10)$

18.a) Explain the Law of Independent Assortment and Law of Segregation.

(**OR**)

b) Illustrate the dihybrid cross with an example using checker board.

19.a) Comment on blood groups of man.

(**OR**)

- b) Infer the mechanism of sex determination in plants.
- 20.a) Compare spontaneous mutation and induced mutation with relevant examples.

(OR)

- b) Summarize the genetic basis of male sterility in maize.
- 21.a) Explain the basic requirements for internet.

(OR)

- b) Compare the applications of BLAST and FASTA.
- 22. a) Show the basic differences in prokaryotic and eukaryotic genome organization.

(**OR**)

b) Compare the principle and applications of RAPD and RFLP.

SECTION – D

Answer any THREE Questions :

 $(3 \times 10 = 30)$

- 23. Build a checker board to explain the 9:7 ratio.
- 24. Describe the mechanism of crossing over and mention its significance.
- 25. Apply the operon concept to explain the regulation of gene expression in prokaryotes.
- 26. Develop a phylogenetic tree using bioinformatic tools.
- 27. Select a suitable amplification technique to investigate the genomics of an individual and give details of the complete protocol.



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B.Sc. Botany Degree (Semester) Examinations, November 2019 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

$(10 \times 1 = 10)$

1. Floral diagram represents the

Answer ALL Questions :

- a) Position of the flower
- b) Number and arrangement of floral parts in the flower
- c) Structure of the flower
- d) Habit of the plant
- 2. Bentham and Hooker classified Gamopetalae into
 - a) Thalamiflorae, Disciflorae, Calyciflorae
 - b) Inferae, Heteromerae, Bicarpellatae
 - c) Curvembryeae, Unisexuales, Microembryeae
 - d) All are correct
- 3. During the collection of fresh plant material for processing into herbarium, the most satisfactory method is using
 - a) Field press b) Vasculum c) Mucksack d) Corrugates
- 4. Chemotaxonomy is otherwise called as
 - b) Chemical taxonomy
 - c) Chemical plant taxonomy d) All are correct
- 5. Inferior ovary present in _____

a) Chemosystematics

a) Cucurbitaceae b) Lamiaceae c) Solanaceae d) Poaceae

6.	Mimosa pudica	is a		
	a) Herb	b) Tree	c) Shrubs	d) Climbers
7.	Rubiaceae com	es under the serie	es of	
	a) Inferae	b) Heteromerae	c) Thalamiflorae	d) Califlorae
8.	Orchidaceae ha	as mostly		
	a) Ornamental	plants	b) Medicine plant	s
	c) Fragrant plan	nts	d) All are correct	
9.	Gossypium belo	ongs to	family	·.
	a) Fabaceae	b) Malvaceae	c) Sterculiaceae	d) Cesealpnaceae
10.	Cardamom is ob	otained from		
	a) Fruits	b) Seeds	c) Pod	d) Flower

<u>SECTION – B</u>

<u>Answer any FIVE Questions</u> : $(5 \times 2 = 10)$

- 11. Define ICBN.
- 12. Write about Numerical taxonomy.
- 13. Comment on Polypetalae.
- 14. List four advanced characteristics of Amaranthaceae.
- 15. Give the botanical name of any two economic important plants of Poaceae.
- 16. Name any two beverage plants.
- 17. Give some of the common condiments.

<u>SECTION – C</u>

Answer ALL Questions :

 $(5 \times 5 = 25)$

18.a) Comment on Botanical Nomenclature.

(**OR**)

b) Give a brief account on Engler and Prantl system of classification.19.a) Describe the field trip and their importance.

(OR)

- b) Write a short note on herbarium techniques.
- 20.a) Distinguish the general feature of familyAnnonaceae.

(**OR**)

b) Write a short note on Mimosaceae.

21. a) Give an account on general characters of Asteraceae.

(**OR**)

- b) Briefly explain the general characters and economic importance of Amaranthaceae.
- 22.a) Describe the fibre yielding plants and their economic importance.

(**OR**)

b) Briefly describe the spice yielding plants and their importance.

<u>SECTION – D</u>

Answer any THREE Questions :

 $(3 \times 10 = 30)$

- 23. Give an elaborate account on Bentham & Hooker classification. Add notes on their merits and demerits.
- 24. Write an essay on modern trends in taxonomy with special reference to Chemotaxonomy.
- 25. Explain in detail the general characteristics and economic importance of Meliaceae.
- 26. Discuss in detail the general characteristics and economic importance of Solanaceae.
- 27. Discuss the processing and extraction of Sugars in detail.



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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Core Subject : Fifth Semester : Paper – II

PLANT PHYSIOLOGY Under CBCS – Credit 3

Time: 3 Hours

Max. Marks: 75

<u>SECTION – A</u>

<u>Answer ALL Questions</u> :

 $(10 \times 1 = 10)$

1. Diffusion pressure is,

a) Directly proportion to concentration of diffusing particles

- b) Inversely proportional to concentration of diffusing particles
- c) Independent of concentration of diffusing particles
- d) None of the above

c) Heliobacteria

- 2. Casparian strips are found in
 - a) Epeidermal cellsb) Cortical cellsc) Pericycled) Endodermal cells

3. Photosynthetic pigments are found in this part of chloroplasts

a) Stroma lamellae b) Thylakoids c) Stroma d) All of above

4. Chromatophores constitute the photosynthetic apparatus in,

- a) Green bacteria b) Purple bacteria
 - d) All of above

5. Conversion of nitrate into ammonia is a

- a) Reductive process b) Oxidative process
- c) Amination process d) None of the above

- 6. Heme and globin parts of leghemoglobin are synthesized on
 - a) Bacterial and host plant genome respectively
 - b) Bacterial genome
 - c) Host plant genome
 - d) None of the above
- 7. An important constituent of proteins, nucleic acids, prophyrins and alkalids is
 - a) Mg b) N c) S d) Ca
- 8. One of the first enzymes discovered in isozyme form is,
 - a) Aspirate kinase

- b) Lactate dehydrogenease
- c) Malate dehydrogenase
- d) All of above

 $(5 \times 2 = 10)$

- 9. Coleoptiles is
 - a) Protective covering around plumule in grass seedling
 - b) Protective covering around plumule in dicot seedling
 - c) Protective covering around radical in grass seedling
 - d) All of above
- 10. Vernalin is
 - a) Floral hormone b) Inhibitor of flowering d) All of above c) Fruit ripening hormone
 - **SECTION B**

Answer any FIVE Questions :

- 11. Define osmosis.
- 12. What is guttation?
- 13. What is Kranz anatomy?
- 14. Define central dogma.
- 15. What are nonsence codons?
- 16. List out micronutrient elements.
- 17. Name the types of phytohormones.

SECTION - C

Answer ALL Questions :

 $(5 \times 5 = 25)$

18.a) Write notes on plasmolysis.

(**OR**)

b) Explain the mechanism of active absorption of water in plants. 19.a) Illustrate the photosynthetic pigments.

(**OR**)

b) Explain the respiration quotient with example.

20. a) Explain the transamination.

(OR)

b) Write notes on β -oxidation.

21.a) Illustrate the Lock and Key model of enzyme activity.

(\mathbf{OR})

- b) Comment on Mass flow hypothesis.
- 22.a) Write notes on role of ethylene in Plants.

(**OR**)

b) Explain the vernalization.

SECTION – D

Answer any THREE Questions :

- $(3 \times 10 = 30)$
- 23. What is transpiration? Discuss the mechanism of opening and closing of stomata.
- 24. Explain various steps of glycolysis.
- 25. Explain the protein synthesis.
- 26. Illustrate the classification and properties of enzymes.
- 27. Discuss the physiological effects of auxins and gibberellins.



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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Core Subject : Fifth Semester : Paper – III

MICROBIOLOGY

Under CBCS – Credit 3 Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions :

 $(10 \times 1 = 10)$

1. Spirulina belongs to

a) Xanthophyceae b) Cyanophyceae

- c) Rhodophyceae d) Pheophyceae
- 2. Who is considered as father of microbiology?
 - a) Antony von Leeuwenhoek b) Koch
 - d) Pasteur
- 3. Sterilization is

c) Jenner

- a) Removal of microbial contamination
- b) Complete destruction of all forms of life
- c) Removal of vegetative only cells
- d) Removal of most nutrients in the mexiver
- 4. Which of the following is used to sterilize Laboratories.
 - a) Chlorine b) Ethylene oxide
 - c) Autoclave d) Ultraviolet radiation
- 5. Which of the following are Trace elements?

a) Zn, Cu, Mn	b) MO, Ni, B and CO
c) Both a & b	d) C, N, P, K

6. Agar-Agar is obtained from this algae?

a) Red b) Brown c) Blue green d) Green

- 7. Which one of the photosynthetic pigment is found in all prokaryotic and eukaryotic photo autotrophs?
 - a) Chlorophyll c b) carotenoids c) phycobilins d) chlorophyll a
- 8. Which of the following is Purple sulfur bacterium.

a) Clorobium b) Chromatium c) Rodospirillum d) Chlorofexus

9. Antibodies are

a) Proteins		b) Glycopro	oteins
c) Phosphol	ipids	d) None of	these
10. Immunoglob	oulin found in Tear is?		
a) IgA	b) IgD	c) IgM	d) IgE

<u>SECTION – B</u>

<u>Answer any FIVE Questions</u> : $(5 \times 2 = 10)$

- 11. Write short notes on the following i) Capsule ii) Flagella
- 12. Mention the various methods of microbial control.
- 13. Name the broad categories of chemical agents used to control micro organisms.
- 14. Write the phases of growth curve.
- 15. Why is photosynthesis considered as oxidation reduction process?
- 16. What is an antigen? Write the types of antigen.
- 17. Write the types of immunity.

<u>SECTION – C</u>

Answer ALL Questions :

 $(5 \times 5 = 25)$

18.a) Briefly explain the structure of viruses.

(OR)

b) List down the general features of Cyanobacteria.

19.a) How are microbes controlled by various chemical agents?

(**OR**)

- b) Explain the role of antibiotics in controlling the growth the microorganism.
- 20.a) How are bacteria classified on the basis of nutrition?

(OR)

- b) Explain the various types of media. Add a note on the preparation of media.
- 21.a) Briefly explain the electron transport system of green bacteria.

(OR)

- b) Discuss the fermentation process of lactic acid.
- 22. a) Explain the basic structure of antibody.

(**OR**)

b) Write the types of antigen – antibody reaction.

<u>SECTION – D</u>

Answer any THREE Questions :

$(3\times 10=30)$

- 23. What is Gram staining? Explain the basic steps envolved in Gram staining.
- 24. Explain the uses of physical agents in controlling microorganisms.
- 25. Discuss the role of antimicrobial agents.
- 26. Discuss the methods of measurement of bacterial growth.
- 27. Write a brief account on immune system.



Answer ALL Questions :

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – III : Elective Subject : Fifth Semester : Paper – I

MEDICINAL BOTANY

	Under CBCS – Credit 5	
Time: 3 Hours		Max. Marks: 75

<u>SECTION – A</u>

 $(10 \times 1 = 10)$

1. Ayurveda system originated from b) South America c) North India d) South India a) India 2. Who is the father of ayurvedic medicine? a) Charaka Samhita b) Avicenna c) Brown d) All correct 3. Ephedrine, Reservine and Ergot belongs to _____ b) Terpenoids a) Steroids c) Alkaloids d) Fixed Oils 4. The compounds that are directly involved in the growth and development of plants are called _____ a) Secondary metabolites b) Primary metabolites c) Enzymes d) Resins 5. Melting point of colophony is c) 40-50°C a) 80-90°C b) 20-30°C d) 75-85°C 6. Clove buds are mixed with _____ a) Clove seed b) Clove dried leaf and stalk c) Clove root d) All are correct 7. Sandal used for b) Relief the stomach pain a) Care about skin c) Cure the head ache d) All are incorrect

8. *Ferula asafoetida* belongs to _____

c) Araceae d) Apiaceae a) Arecaceae b) Annonaceae

9. Useful part of Aloe vera

a) Stem d) None of the above b) Leaf c) Root 10. Embelica officinalis fruits are used to cure _____

b) Liver disease c) Jaundice d) All of the above a) Scurvy

SECTION – B

Answer any FIVE Questions : $(5 \times 2 = 10)$

- 11. What are the five major properties of ayurvedic herbs?
- 12. What are organized drugs?
- 13. What do you mean by garbling?
- 14. Define Adulteration.
- 15. Write the characteristics of ginger.
- 16. Write any two uses of clove.
- 17. Write any two chemical constituents of ashwagandha.

SECTION – C

Answer ALL Questions :

18.a) Write about Alphabetical classification.

 (\mathbf{OR})

b) Give an account of the five types of vayu.

19.a) Elaborate on the classification of alkaloids.

(**OR**)

- b) Explain how is resin collected from asafoetida.
- 20.a) Explain the reasons for unintentional Adulteration.

(**OR**)

- b) Give an account on physical evaluation of crude drugs.
- 21.a) Explain the chemical constituents of ginger.

(**OR**)

- b) Explain the morphology of useful parts of Cassia senna.
- 22.a) Write about the cultivation of *Aloe vera*.

(**OR**)

b) Write briefly about the harvesting and processing of Withania somnifera.

SECTION – D

Answer any THREE Questions :

 $(3 \times 10 = 30)$

- 23. Describe the chemical classification of drugs. Add a note on the merits and demerits.
- 24. Explain the isolation method of tannins and list down their medicinal uses.
- 25. Describe different steps of collection and processing of crude drugs.
- 26. Describe the morphology of the useful parts of Santalum and its medicinal uses.
- 27. Write an essay on chemical constituents, cultivation, processing and harvesting of Carthamus.

 $(5 \times 5 = 25)$



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B.A. / B.Sc. Degree (Semester) Examinations, November 2019 Part – IV : Non-Major Elective Subject : First Semester : Paper – I

ENERGY RESOURCES

Under CBCS - Credit 2Time: 2 HoursMax. Marks: 75

<u>SECTION – A</u>

Answer ALL Questions :				$(10 \times 1 = 10)$		
1. Energy is released from fossil fuels when they are						
	a) Pumped	b) Burned	c) Cooled	d) Pressurized		
2.	2. The most nuclear fuel used in the world is					
	a) Thorium – 232	,	b) Uranium – 238			
	c) Uranium – 235		d) Plutonium – 239			
3.	3. The blades in wind turbines are connected to					
	a) Nacelle	b) Tower	c) Foundations	d) String		
4. How many forms of fossil fuels are there						
	a) One	b) Two	c) Three	c) Four		
5. Energy in the form of heat and light is obtained by						
	a) Biomass	b) Fossil fuels	c) Sun	d) Wind		
6. Where is the largest wind farm located in India?						
	a) Jaisalmer wind park, Rajasthan					
	b) Muppandal wind farm, Tamilnadu					
	c) Vaspet wind farm, Maharashtra					
	d) Chakala wind farm, Maharastra					

7. The main composition of blogas is						
a) Carbon dioxide	b) Nitrogen	c) Methane	d) Hydrogen			
8. When animals and p	8. When animals and plants are rotten in absence of air, there produces					
a gas called		·				
a) Oxygen	b) Carbon diox	ide c) Biogas	d) Methane			
9. Which of the following is a disadvantage of most of the renewable						
energy sources?						
a) Highly polluting	a) Highly polluting		b) High waste disposal cost			
c) Unreliable supply	ý	d) High run	ning cost			
10. The term biomass most often refers to						
a) Inorganic matter		b) Organic	matter			

c) Chemicals

d) Ammonium compounds

SECTION – C

Answer ALL Questions :

 $(3 \times 9 = 27)$

18.a) Write a note on energy resources and its present world scenario.

(**OR**)

b) Explain the conventional energy sources with example.

19.a) Discuss the solar energy power plant in India.

(**OR**)

b) Explain the wind energy and its utilization.

20. a) Give a note on tidal energy.

Answer any TWO Questions :

(**OR**)

b) Enumerate the biodiesel production.

SECTION – B

Answer any FIVE Questions :

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11. Define energy.

- 12. Distinguish the renewable and non-renewable energy sources.
- 13. How to form natural gas?
- 14. Write a short note on thermal power.
- 15. What is liquefaction?
- 16. What are the sources of biofuel?
- 17. What is greenhouse gas?

 $(2 \times 14 = 28)$

21. Write a note on various source of non-conventional energy and their advantages.

SECTION – D

22. Give an account of advantages and disadvantages of nuclear energy.

- 23. Describe the methods of bioethanol production and its importance.
- 24. Write a brief note on biogas plant.

$(5 \times 2 = 10)$



Time: 2 Hours

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – IV : Skill Based Subject : Third Semester : Paper – I

BIOINSTRUMENTATION

Under CBCS – Credit 2

Max. Marks: 75

<u>SECTION – A</u>

Answer ALL Questions :

 $(10 \times 1 = 10)$

1. Who was invented simple microscope?

a) Anton Van Leeuwenhock	b) Zaccharias
c) Joseph Jackson Lister	d) Robert Hooke

2. Who was/were developed electron microscope?

- a) Joseph Jackson Lister b) Robert Hooke and Zaccharias
- c) Max knoll and Ernst Ruska d) Robert Brown
- 3. Which one of the wave length light is used for observation of specimen in the fluorescent microscope?
 - a) Infra rays b) Gamma rays
 - c) Ultra violet rays d) Cosmic rays
- 4. Which one the instrument is used for measuring thermal energy?
 - a) Colrimeter b) TEM c) SEM d) Centrifuge
- 5. What is the pH range of water?

a) Seven b) Above 7 c) below 7 d) Zero

- 6. Which one of the factor responsible for settles down of particles by centrifugation?
 - a) Speed b) Force c) Rotation d) Gravitation Full

- 7. Which one of the solution is used by differential centrifugation?
 - a) Phosphate solution b) Sucrose solution
 - c) Tincture of iodine d) Soda water
- 8. Who was/were invented chromatographic technique?
 - a) Sadi Carnot b) Tswett
 - c) Cormier and Tottler d) Huygen
- 9. How does the chromatographic technique separate the components?
 - a) Density b) Speed c) Migration d) Size
- 10. Which one of the biomolecules are charged molecules?
 - a) DNA & RNA b) Nucleotides
 - c) Amino acids & Proteins d) All

<u>SECTION – B</u>

Answer any FIVE Questions :(5 × 2 = 10)11. Define Colorimeter.12. Comment on Beer-Lambert's Law.13. What is Centrifugation?14. Define Buffers.15. Note on Rf Value.16. What is pH?17. Define Chromatography.

Answer ALL Questions : (3 × 9 = 27) 18.a) Give a brief account on phase contrast microscopy. (OR) b) Write short note on working principle of pH meter. 19.a) Write brief account on density gradient centrifugation. (OR) b) Explain about thin layer chromatography (TLC). 20.a) What are the supporting media of electrophoresis? Add its applications. (OR) b) Write account on agarose gel electrophoresis and its procedure.

SECTION – C

<u>SECTION – D</u>

<u>Answer any TWO Questions</u> :

 $(2 \times 14 = 28)$

- 21. Detailed account on working principles of Transmission and scanning electron microscopy.
- 22. Write essay on Differential Centrifugation.
- 23. Describe the working principle of paper chromatography.
- 24. Explain about polyacrylamide gel electrophoresis (PAGE) and its applications.

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B.Sc. Botany Degree (Semester) Examinations, November 2019 Part – IV : Skill Based Subject : Fifth Semester : Paper – I

MUSHROOM CULTIVATION

Under CBCS – Credit 2

Time: 2 HoursMax. Marks: 75

<u>SECTION – A</u>

Answer ALL Questions :

 $(10 \times 1 = 10)$

1. The fruiting body of mushroom is technically called

a) Chlamydosporesb) Aplanosporec) Zoosporesd) Sporophore

2. How does the mushroom take their nutrition?

a) Autotrophic b) Heterotrophic c) Chemotropic d) All

3. What are the parts found in the mushroom?

a) Base b) Stipe c) Cap d) All

4. Which one of the following class belongs to mushroom?

a) Deuteromycetes b) Basidiomycetes

c) Zygomycetes d) Oomycetes

5. Which one of the following deadly poisonous mushroom?

- a) Amanita phaloides b) Agaricus bisporus
- c) Volvariella volvacea d) Pleurotus forida

6. Which one is commonly used as substrate for mushroom cultivation?

a) Agricultural wastes	b) Inorganic wastes
c) Plastic wastes	d) Domestic wastes

7. Carbendazium is

a) Insecticide b) Fungicide c) Pesticide d) Biofertilizer

- 8. What are the constraints of mushroom production?
 - a) Weed moulds b) Pests c) Diseases d) All
- 9. Which one of the following pest damages the mushroom bed?a) Stink Bugsb) Hornwormsc) White fliesd) Phorids10. How much gram of protein content present in the 100 gram of
- Mushroom?

a) 19 b) 27 c) 45 d) 77

<u>SECTION – B</u>

 $(5 \times 2 = 10)$

Answer any FIVE Questions :

11.Comment on spawn?

- 12. What is a culture room?
- 13. State about the composition of PDA medium.
- 14. Note on general hygiene of mushroom cultivation.
- 15. List out the recipes of mushroom?
- 16. What is pure culture?
- 17. Bring out the nutritional values of mushroom.

<u>SECTION – C</u>

Answer ALL Questions :

 $(3 \times 9 = 27)$

18.a) Write about the nutritive and medicinal values of mushroom and its advantages.

(**OR**)

- b) What is poisonous mushroom? And its distinctive features, symptoms of mushroom poisoning.
- 19.a) Brief account on some precautions of mushroom cultivation.

(**OR**)

- b) State the life cycle of Agaricus bisporus with neat sketch.
- 20.a) Write about the preparation of cylindrical beds.

(**OR**)

b) Illustrate the life history of *Pleurotus* sp.

<u>SECTION – D</u>

Answer any TWO Questions :

 $(2 \times 14 = 28)$

- 21. Describe the isolation procedure of mushroom from fruiting bodies.
- 22. What are the weed moulds damage the spawn, beds and its prevention mechanism?
- 23. i) How does the storage of mushroom and add its various methods.ii) Give detailed account on diseases of mushroom.
- 24. What are the common edible mushrooms in India? and draw their morphological structures.



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B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part – III : Allied Subject : Third Semester : Paper – II

PLANT DIVERSITY Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

 $(10 \times 1 = 10)$

1. Name the phytopigment presents in the *Phaeophyceae*.

a) Fucoxanthin b) Phycoerythrin c) Chlorophyll d) Heamoglobin

2. Reserve food materials of Phaeophyceae are

a) Mannitol and Laminarin b) Floridean starch and floridosides

d) Amino acids

3. Which one of the following class of fungi are ingesting bacteria?

- a) *Acrasiomycetes* b) *Myxomycetes*
- c) *Plasmodiophoromycetes* d) Deuteromycetes

4. Dikaryophase of fungus is reported in _____

a) Oomycetes

c) Myxomycetes

c) Oils

- b) Trichomycetes and Zycomycetes
- d) Ascomycetes & Basidiomycetes
- 5. Unique feature of Bryophytes
 - a) They produce spores
 - b) They lack vascular tissues
 - c) They lack roots
 - d) Their sporophyte is attached to gametophyte

6.	The	sporophyte	of .	Funaria	consists	of
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a) Foot b) seta c) Capsule d) All the above

7. The vascular tissue is confined to the central region of the stem formsa) Bundlesb) stelec) Cortexd) Pericycle

8. Name the epiphytic species of *Lycopodium*

a) *L. clavatum*b) *L. inundatum*c) *L. lucidulum*d) *L. phlegmaria*

9. Phloem of gymnosperms differs from angiosperms by

- a) Having no sieve tube b) Having no sclerenchyma
- c) Having parenchyma d) Having no companion cells
- 10. Main body of Cycas plant is

a) Sporophyte b) C	Gametophyte	c) Thallus	d) Mycelium
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<u>SECTION – B</u>

 $(5 \times 2 = 10)$

Answer any FIVE Questions :

11. Comment on cryptostomata.

12. Mention the industrial value of Algae.

13. What is phycobiont?

14. What is pycnidium?

15. Define homothallic condition.

16. Draw the morphology of Lycopodium.

17. What is coralloid root?

<u>SECTION – C</u>

Answer ALL Questions :

 $(5 \times 5 = 25)$

18.a) Explain in briefly about the thallus nature of Nostoc.

(**OR**)

b) Enumerate the characteristic feature of algae.

19. a) Describe the stages of *Puccinia* on Wheat plant.

(**OR**)

- b) Explain the different types of lichens with examples.
- 20.a) What are all the types of vegetative reproduction found in Funaria? Explain.

(**OR**)

b) List out the characteristic features of bryophytes.

21.a) Describe the characteristic features of Pteridophytes.

(**OR**)

b) Explain the stellar variation in Lycopodium.

22.a) Discuss in briefly about characteristic features of Gymnosperms.

(**OR**)

b) Illustrate and explain about the life cycle of Cycas.

<u>SECTION – D</u>

Answer any THREE Questions :

 $(3 \times 10 = 30)$

23. Give a detail account on the classification of algae proposed by Fritsch.

- 24. Write the economic importance of fungi.
- 25. Discuss about sexual reproduction of Funaria.
- 26. Explain in detail about the life cycle pattern of Lycopodium.

27. Write an essay on the economic importance of Gymnosperms.