PBBT18207

**M.Sc. DEGREE EXAMINATIONS, MAY 2019**

**Second Semester**

**PLANT BIOLOGY AND BIOTECHNOLOGY**

**Computer Application in Biology and Biostatistics**

**Time: 3 Hours** **Max. Marks: 60**

**SECTION – A (10 x 1 =10 Marks)**

**Answer ALL questions.**

1. What is CD ROM?
2. Explain ALU
3. Name any two Data structures
4. What are Protocols?
5. Explain NCBI
6. What is MacClade in Taxonomy?
7. Explain Harmonic mean
8. Define Quartile deviation
9. Describe Degree of freedom
10. Write notes on 'Student's t-test'

**SECTION – B (5 x 4 = 20 Marks)**

**Answer ALL the Questions**

11. a. Give an account of Soft wares

**(OR)**

b. What are different types of Output devices?

12. a. Explain OSI reference model

**(OR)**

b. Describe TCP/IP reference model

13. a. Give an account of CLUSTALW

**(OR)**

b. Explain Database on bibliography

14. a. Give notes on Standard deviation and Coefficient of Variation

**(OR)**

b. Describe any 4 measures of Central tendency

15. a. Explain Chi-Square test in biological research

**(OR)**

b. Describe regression analysis

**SECTION – C (3 x 10 = 30 Marks)**

**Answer any THREE questions**

16. Give an account of different types of Computers
17. Describe fundamentals of Networking
18. Explain various Taxonomic application soft wares
19. Describe Probability distributions in detail
20. Give an account of basics and applications of SPSS

PBBT18208

# M.Sc. DEGREE EXAMINATIONS, MAY 2019

**Second Semester**

**PLANT BIOLOGY AND BIOTECHNOLOGY**

**Plant Anatomy and Embryology**

**Time: 3 Hours** **Max. Marks: 60**

## SECTION – A (10 x 1 =10 Marks)

**Answer ALL questions.**

1. Define Quiescent centre.
2. Explain wound healing process in plants.
3. Define nodal anatomy.
4. Locate origin of lateral root.
5. What is syndetochelic stomatal development?
6. Define Plastochron.
7. Explain Tapetum.
8. What is Nemic phenomenon?
9. What is totipotency?
10. Define synthetic seed.

## SECTION – B (5 x 4 = 20 Marks)

**Answer ALL the Questions**

11. a. Explain anomalous secondary thickening in aerial roots of *Tinospora.*

**(OR)**

b. Give a note on the different wood types.

12. a. What is Korper-Kappe theory.

**(OR)**

b. Describe meristem based on position.

13. a. Explain phyllotaxy with example.

**(OR)**

b. Give a note on the flower development in *Arabidopsis.*

14. a. Describe the structure of transverse section of anther.

**(OR)**

b. Give an account of triple fusion and associated events

15. a. Describe Suspensor polyembryony.

**(OR)**

b. Explain somatic embryogenesis.

## SECTION – C (3 x 10 = 30 Marks)

**Answer any THREE questions**

16. Differentiate the structural components of vascular flower in plants.
17. Describe various theories of organization of shoot apex .
18. Give an account of epidermal tissue system.
19. Describe double fertilization and developmemt of endosperm in plants.
20. Explain different types of polyembryony seen in higher plants.

PBBT18209

M.Sc. DEGREE EXAMINATION, MAY 2019

Second Semester

PLANT BIOLOGY AND BIOTECHNOLOGY

Nano Biotechnology

Time: 3 Hours Max. Marks: 60

SECTION-A (10 x 1=10 Marks)
Answer ALL questions

Write short note on the following

1. Nano particles
2. Nano science
3. Green synthesis
4. FTIR
5. CNT
6. Nano machines
7. Nano fertilizer
8. Nano medicine
9. Nano technology
10. XRD

SECTION – B (5 x4=20 Marks)
ANSWER ALL the Questions

11. (a) Write short note on concept of nano technology

(OR)

(b) Write about nanoscale properties

12. (a) Write short note on nano particle preparation

(OR)

(b) Write about inert gas condensation

13. (a) Explain Carbon based nano structure

(OR)

(b) Write about Metal based nano structure

14. (a) Briefly explain nano technology in Agriculture

(OR)

(b) Briefly explain nano pesticides

15. (a) Write about ethical issues in nano technology

(OR)

(b) Write about Socio economic Challenges in nano technology

SECTION – C (3 x 10 = 30 Marks)
Answer any THREE questions

16. Wrote an essay on commercial importance of nano particles.
17. Write an essay on Biological nano particle production.
18. Write about polymer based nano structure.
19. Write an essay on Nanotechnology in food industry.
20. Write an essay on impact of Nano technology in Health and Environment.

PBBT18210

M.Sc. Degree Examinations, May 2019

Second Semester

PLANT BIOLOGY AND BIOTECHNOLOGY

Bio-Instrumentation

**Time: 3 Hours** **Max. Marks: 60**

## SECTION – A (10×1=10 Marks)

**Answer ALL questions.**

Write Short note on the following

1. Camera Lucida
2. Fluorescence
3. RCF
4. Glass electrode
5. Stationary phase and Mobile phase
6. Retardation factor (Rf) value
7. Single beam spectrometer
8. Cuvette
9. Half life of radioactive isotope
10. Curie (ci)

## SECTION – B (5×4=20 Marks)

**Answer ALL the questions.**

11. a. Write short note on rotary microtomes. Mention its advantages

(OR)

b. Comment on the following (i). Magnification (ii) Resolving Power

12. a. Short note on sedimentation coefficient

(OR)

b. Mention the structure of two types of electrode

13. a. Bring out the principle and application of TLC

(OR)

b. What is the principle of column chromatography and explain its components

14. a. Write short note on following (i) absorbance of spectrophotometer (ii) transmittance of spectrophotometer

(OR)

b. Discuss the Beer Lambert's law

15. a. What is radio isotope give examples

(OR)

b. What are the advantages and disadvantages of scintillation counting

## SECTION – C (3×10=30 Marks)

**Answer any THREE questions.**

16. Explain the principle, structure and optical pathway of phase contrast microscope.

17. Describe the principle, components and application of analytical ultra centrifuge.

18. Give an account on the principle, components of SDS PAGE.

19. Illustrate the principle, structure and applications of uv-visible spectrophotometer.

20. Discuss the working principle, components of GM counter. Mention its advantages.

PBSC18212

**M.Sc. Degree Examinations, May 2019**

**Second Semester**

**PLANT BIOLOGY AND BIOTECHNOLOGY**

**Medical Botany**

**Time: 3 Hours** **Max. Marks: 60**

**SECTION – A (10×1=10 Marks)**
**Answer ALL questions.**

Write Short note on the following

1. Three basic types of energy in ayurveda
2. Founder of homeopathy medicine
3. Use of biofertilizer in medicinal plant cultivation
4. Active principle of *Aloe vera*
5. Adulterant
6. MS medium
7. Useful part and active principle of *Terminalia Chebula*
8. Therapeutic value of ginger
9. Role of silica gel in column chromatography
10. Common solvents used for extracting crude drug

**SECTION – B (5×4=20 Marks)**
**Answer ALL the questions.**

11. a. Explore the history of Ayurvedic knowledge

(OR)

b. Write the common features in Unani medicine

12. a. What are the factors affecting cultivation of medicinal plants?

(OR)

b. Briefly discuss the methods of drying process for extracting crude drugs

13. a. What are the two major types of drug adulteration?

(OR)

b. What are the endangered medicinal plants? Explain.

14. a. Analyse the active principle and useful parts of Neem. (OR)

b. Write the active principle and morphology of the useful part of *Asafoetida.*

15. a. Briefly explain the technique of Collection and drying method of bioactive compound.

(OR)

b. What are the column packing materials?

**SECTION – C (3×10=30 Marks)**
**Answer any THREE questions.**

16. Give an account of Ethnobotany and folklore Medicine.

17. Discuss the methods of cultivation of *Aloe vera.*

18. Give an account of phytochemical evaluation of crude drugs .

19. Analyse the biological source, geographical distribution, morphology of useful parts, active principle and therapeutic value of Turmeric.

20. Outline the principle components and working mechanism of Flash chromatography.

**PBHT17419**

M.Sc., DEGREE EXAMIANTION. May2019

Fourth Semester

PLANT BIOLOGY AND BIOTECHNOLOGY

Plant Physiology

Time . 3 hours Maximum : 60 marks

**SECTION - A – (10 X 1 = 10)**

Answer ALL questions

Describe the following:

1) Water potential
2) Apoplast
3) RUBISCO
4) CAM
5) Oxidation
6) Reduction
7) N2- fixation
8) Symbiosis
9) Vernalization
10) Gibberellins

**SECTION - B – (5 X 4 = 20)**

Answer ALL THE questions

11. a) Write short notes on symplast.

(OR)

b) Describe the translocation of water.

12. a) Explain cyclic photophosphorylation.

(OR)

b) Describe the Ultra-structure of chloroplast.

13. a) Describe the dark reaction.

(OR)

b) Explain the aerobic respiration.

14(a) Explain the biological $N_2$ fixtation.

(OR)

(b) Describe readuction of nitrate to $NH_3$.

15(a) Explain the plant growth regulator.

(OR)

(b) Describe the photoperiodism.

**SECTION – C – ( 3 X 10 = 30 Marks )**

Answer any THREE questions

16) Write essay on Apoplast and Symplast concept.
17) Write essay on $C_3$ and $C_4$ cycle.
18) Explain the kreb cycle.
19) Write on essay an $N_2$ Metabolism.
20) Write an essay on growth regulators.

**PBHT17420**

M.Sc., DEGREE EXAMIANTIONS, May 2019

Fourth Semester

PLANT BIOLOGY AND BIOTECHNOLOGY

**Applied Plant Biotechnology**

Time : 3 hours Maximum : 60 marks

**SECTION - A – (10 X 1 = 10)**

Answer ALL questions

Describe the following:

1) Callus
2) Media
3) PEG
4) Somaclonal variation
5) Bioreactor
6) Secondary metabolites
7) $T_I$ - plasmid
8) Viral vector
9) Electroporation
10) Particle Bombardment

**SECTION - B – (5 X 4 = 20)**

Answer ALL THE questions

11. a) Explain briefly cell suspension culture.

(OR)

b) Briefely explain Organogenesis.

12. a) Write the application of Micropropagation.

(OR)

b) Explain the stage of axillary shoot induction.

13. a) Write notes on types of Bioreactors.

(OR)

b) Write notes on mass cultivation of plant cells.

14 a) Write the application of viral vectors.

(OR)

b)Write Briefly on Agrobacterium based vectors.

15 a) Write notes on Gene gun method.

(OR)

(b) Write note on Electroporation.

**SECTION – C – ( 3 X 10 = 30 Marks )**

Answer any THREE questions

16) Write an Essay on Plant tissue culture.

17) Explain in detail about protoplast isolation culture and fusion.

18) Write the design components and working principal of bioreactor.

19) Explain in Detail Agrobacterium mediated gene transfer.

20) Write an essay on biotransformation in plant cell culture.

**PBSC17424**

M.Sc., DEGREE EXAMIANTION, May 2019

Fourth Semester

PLANT BIOLOGY AND BIOTECHNOLOGY

**MUSHROOM TECHNOLOGY**

Time : 3 hours Maximum : 60 marks

**SECTION - A – (10 X 1 = 10)**

Answer ALL questions Each in not more than 50 words.

Describe the following:

1) Basidiocarp
2) Agaricus
3) Spore
4) Spawn
5) Economic importance of mushroom
6) Harvesting technique of mushroom
7) Poisonous mushroom
8) Any two viral disease of mushroom
9) Button, mushroom
10) Paddy straw mushroom

**SECTION - B – (5 X 4 = 20)**

Answer ALL THE questions

Each in not more than 200 words

11. a) Explain vegetative character of mushroom.

(OR)

b) Write about development of Basidiocarp.

12. a) Explain polythene bag preparation for mushroom cultivation.

(OR)

b) Write about composting technique for mushroom cultivation.

13. a) Write about storage methods of mushroom.

(OR)

b) Explain marketing technique for mushroom.

14 a) Write about Medicinal Mushrooms.

(OR)

b) Explain Health Hazards associated with mushroom cultivation.

15 a) Write about oyster mushroom.

(OR)

(b) Write about milky mushroom.

**SECTION – C – ( 3 X 10 = 30 Marks )**

Answer any THREE questions

Each in not more than 1000 words

16) Write an essay on formation and development of Basidiocarp.
17) Write an essay on Inoculation technique for mushroom cultivation.
18) Write an essay on Economic importance of Mushroom.
19) Write an essay on major disease and control measure during the cultivation of mushroom.
20) Write an essay on cultivation techniques of mushroom.