

Yashavantrao Chavan Institute of Science, Satara (Autonomous)

DEPARTMENT OF BOTANY

Paper XIII: Plant Biochemistry and Molecular Biology (BBT

601/BBPT 601)

Question bank

Q1. Define following Term/Answer in one sentence (2 marks for each question)

1. Monosacharides.
2. Diasaccharides
3. Homopolysaccharides
4. Heteropolysaccharides
5. Glycoside
6. Linkage
7. Stereoisomers
8. Enantiomers
9. Simple Lipids
10. Complex lipids
11. Phospholipids
12. Glycolipid
13. Saturated fatty acid
14. Unsaturated fatty acid
15. Gluconeogenesis
16. Nucleotide
17. Deoxyribose sugar
18. Forms of DNA
19. Three components of DNA
20. Types of Nitrogen bases in DNA
21. Types of Nitrogen bases in RNA
22. Give examples of- Acidic Amino Acids
23. Give examples of- Basic Amino Acids,
24. Give examples of- Sulphur containing amino acids,
25. Define - peptide bond

Q2. Long Answer Questions (10 marks for each question)

1. Describe in detail classification of carbohydrates with suitable examples.
2. Write a note on physical properties of carbohydrates.
3. What are different functions of carbohydrates in biological system.
4. What is isomerism ? Explain stereoisomerism and di stereoisomerism of carbohydrates.
5. Describe structure and properties of stearic acid.
6. Describe structure and properties of palmitic acid.
7. What is gluconeogenesis? Write a note on it's role during seed germination.
8. What are different functions of lipids in biological system?
9. Structural organization of proteins.
10. Classification of amino acids with suitable examples.
11. Functions of proteins in biological system.
12. Functional classification of proteins.
13. Explain in detail Lac operon.
14. Explain in detail Tryp operon.
15. Write a note on DNA replication in eukaryotes.
16. Explain in detail Watson and Crick model of DNA.

Q3. Short Notes (5 marks for each question)

1. Chemical properties of carbohydrates.
2. General properties of carbohydrates.
3. Stereoisomerism of carbohydrates with suitable examples.
4. Distereoisomerism of carbohydrates with suitable examples.
5. Structure of pentose sugar with suitable examples.
6. Structure of hexose sugar with suitable examples.
7. Structure of disaccharides with suitable examples
8. Structure of homopolysaccharides with suitable examples
9. Role of starch in biological system
10. Structure and properties of Stearic acid.
11. Structure and properties of Palmitic acid.
12. Structure and properties of Oleic acid
13. Fibrous proteins with suitable examples.
14. Transcription of proteins in eukaryotes.
15. Translation of proteins in eukaryotes.
16. Transcription process

17. Translation process
18. Role of Gluconeogenesis
19. Significance of proteins in plants
20. Structure of Oleic acid
21. Structure of Linoleic acid
22. Structure of Linolenic acid
23. Significance of lipids in plants
24. Structural genes of Lac Operon
25. Structure of typical nucleotide
26. General structure of protein
27. Structure of Nitrogen bases in DNA.
28. Structure and role of m-RNA.
29. Structure and role of t-RNA.
30. Structure and role of r-RNA.

Rayat Shikshan Sanstha's
Yashavantrao Chavan Institute of Science, Satara (Autonomous)
DEPARTMENT OF BOTANY
Bioinformatics, Biostatistics and Economic Botany
(Paper XIV, BBT 602/BBPT 602)

Question Bank

Define the following terms

1. Arithmetic mean
2. Bioinformatics
3. Biological Database
4. Biostatistics
5. BLAST
6. Database
7. Protein
8. Gene
9. Genome
10. Amino acids
11. Phylogeny
12. Genomics
13. Proteomics
14. Metabolomics
15. Transcriptomics
16. Mean
17. Mean Deviation
18. Median
19. Mode
20. Object-Oriented database
21. Primary database
22. Relational database
23. Secondary database
24. Specialized database
25. Standard Deviation

Long answer questions

1. Describe the botanical name, morphology, source and economic importance of Wheat and Jowar.
2. Describe the botanical name, morphology, source and economic importance of Chick pea and Pigeon pea.
3. Describe the botanical name, morphology, source and economic importance of Ground nut and Soybean.
4. Describe the botanical name, morphology, source and economic importance of Jowar and Chick Pea.
5. Describe the botanical name, morphology, source and economic importance of Wheat and Groundnut.
6. Describe the botanical name, morphology, source and economic importance of Jowar and Soybean.
7. Describe the botanical name, morphology, source and economic importance of Ginger and Chilly.
8. Describe the botanical name, morphology, source and economic importance of Tea and Coffee.
9. Describe the botanical name, morphology, source and economic importance of Cotton and Agave.
10. Describe the different sampling methods in details.
11. Describe the different types of data.
12. Describe the scopes of bioinformatics.
13. What is biological database? Add a short note on specialized database.
14. What is biological database? Add a short note on primary database.
15. What is biological database? Add a short note on secondary database.
16. What is the retrieval system of biological database? Explain the Entrez.

Short Notes

1. Application of bioinformatics
2. BLAST
3. Chi-square test
4. Economic importance of Coffee
5. Economic importance of Gram
6. Economic importance of Jowar
7. Economic importance of Soybean

8. Economic importance of tea
9. Economic importance of Wheat
10. Economic importance of pigeon pea
11. Economic importance of ground nut
12. GenBank
13. Genome information resources
14. Histogram and polygon
15. Measures of central tendency
16. NCBI
17. Parts used and uses of Agave
18. Parts used and uses of Cotton
19. Parts used and uses of Ginger
20. Parts used and uses of Chilly
21. Protein information resources
22. Students' T-test
23. Primary databases
24. Secondary databases
25. Specialized databases

Rayat Shikshan Sanstha's
Yashvantrao Chavan Institute of Science, Satara
(Autonomous)
Department of Botany
B.Sc.III Plant Protection (BBPT 603)
Question Bank 2021-2022

Q.1. Define following Terms/Answer in one sentence [10]

- 1) Define soil solarization?
- 2) Give the name of chemicals used in seed treatment.
- 3) Define Plant breeding.
- 4) Define Pesticide.
- 5) Give the name of power operated pump.
- 6) What is the name of equipment used for soil treatment?
- 7) What is seed dresser.
- 8) Define hybridization.
- 9) Define fungicide.
- 10) Give the name of pneumatic air pump.
- 11) What is treated seeds?
- 12) What is seed dresser.
- 13) What is hybridization.
- 14) Define pesticide.
- 15) Give the name of hydraulic energy pump.

Q.2. Attempt any two of the following

[20]

- a) Describe the concept, objectives and importance of seed treatment.
- b) Give in detail working and uses of hand pump with suitable diagram.
- c) Describe concept objectives and importance of plant clinic
- d) Describe the concept, objectives and importance of soil treatment.
- e) Give in detail care and maintenance of plant protection equipment and their importance.
- f) Describe concept, need and introduction of IDM.
- g) Give an account on methods in seed treatment.
- h) Give in detail working and uses of power operated pump.
- i) Describe the concept, collection and preservation of pathological and entomological specimens and management.

Q.3. Attempt any four of the following

[20]

- i) Types of nozzles.
- ii) Write a short note on Hybridization.
- iii) Gamma garden.
- iv) Simple seed dresser.
- v) Ecofriendly techniques for soil treatment.
- vi) IDM.
- vii) Types of sensors.
- viii) Plant introduction and acclimatization.
- ix) Back cross method.
- x) Soil injector.
- xi) Ecofriendly techniques for soil treatment.
- xii) Plant Clinic.

- xii) Different types of sensors mist blower.
- xiii) Pure line selection.
- xiv) Describe in brief back cross method.
- xv) Seed dresser.
- xvi) Write a short note on IPM.
- xvii) Enlist the plant museums in India.

B.Sc. III Semester VI General Science Examination

Plant Protection

BBPT 604 Laboratory Techniques in Plant Protection and Pathophysiology

Question Bank

Define following term/ answer in one sentence.

- 1 What is Soil Microbiology
- 2 Define Pedology
- 3 Mercury fungicides example
- 4 Root knot of vegetables caused by
- 5 list any three plant pathologists.
- 6 Define Soil Microbiology
- 7 Define Edaphology
- 8 Name two Branches of Soil Microbiology
- 9 Define Soil Sickness
- 10 Cotton blue used for staining.....
- 11 Dien's stain used for staining.....
- 12 Define Seed Pathology
- 13 Give composition of cotton
- 14 list the fungal pathogens from soil
- 15 Define Microbiology
- 16 GM plant "Golden rice" developed for
- 17 List the issues with GM crops
- 18 "BT Brinjal" was developed by
- 19 "HT Mustard" was developed for
- 20 Define "Microbial pesticide"

Long Answer Questions

- 1 Definitions of Soil Sickness, Causes behind Soil Sickness.
- 2 Give introduction of nursery diseases, explain any two fungal diseases with respect to causal organism and management methods.
- 3 Describe "GMO's" with respect to examples advantages and disadvantages of GMO's

- 4 Describe role of microbes in soil fertility and crop production.
- 5 Define culture media and give types of Culture Media.
- 6 Describe in details Simple Respirometer.
- 7 What is soil sickness? Give causes of soil sickness Management of Soil Sickness.
- 8 Give name of pathogen, Symptoms and management of Nursery diseases that you have studied?
- 9 Describe soil microorganism's common examples and their role in maintaining soil health.
- 10 Explain in detail Paper Chromatographic technique in studying pathophysiology
- 11 Role of soil pathogens in plant pathology.

Short Notes

- 1 Types of Culture Media
- 2 Simple Respirometer
- 3 Importance of plant pathology
- 4 Major GM Crops
- 5 Effective Microorganisms (EM)
- 6 Role of soil pathogens in plant pathology
- 7 Importance of viruses
- 8 Viruses as plant pathogen
- 9 Bacteria as plant pathogen
- 10 Fungi as plant pathogen
- 11 Buried Slide Technique
- 12 Causes of Soil Sickness
- 13 B.T. Cotton
- 14 E. M. Solution
- 15 Microbial pesticides
- 16 Eco friendly botanical pesticides
- 17 Market pathology

Yashavantrao Chavan Institute of Science, Satara (Autonomous)

DEPARTMENT OF BOTANY

Paper XVI: Advanced Botanical Skills and Horticulture II (BBT 604)

Question bank

Q1. Define following Term/Answer in one sentence (2 marks for each question)

1. Peel Mount
2. Maceration
3. Traditional Knowledge
4. Digital Library
5. Olericulture
6. Whole Mount
7. Micro technique
8. Biopiracy
9. Arboriculture
10. Landscape Gardening
11. Clearing
12. Bioprospecting
13. Dehydration
14. National Gene Bank
15. Geographical indication
16. Lawn
17. Sectioning
18. Squash preparations
19. Terrace gardening
20. Vertical garden
21. Rock garden
22. Stain
23. Water garden.
24. Reactive dyes
25. Tissue Fixation

Q2. Long Answer Questions (10 marks for each question)

1. Give procedures of Paraffin and plastic infiltration.

2. Agronomic practices of Tomato.
3. Properties of Teak wood.
4. Classification and Chemistry of Stain.
5. Bio-prospecting.
6. Cultivation and management of Teak.
7. Agronomic practices of Capsicum.
8. Staining Equipment's.
9. Uses of *Dalbergia* wood.
10. Agroclimatic conditions of Tomato.
11. Concept of Traditional Knowledge.
12. Traditional Knowledge Digital Library.
13. Write in brief about micro technique.
14. Write in detailed about cultivation and management of Capsicum.
15. Comment upon Landscape Gardening.

Q3. Short Notes (5 marks for each question)

1. Importance and scope of landscape gardening.
2. Types of Japanese garden.
3. Properties of Indian Rosewood.
4. Objectives of Traditional Knowledge.
5. National Gene bank
6. PBR
7. Objectives of Geographical indications.
8. Principles of landscaping.
9. WTO at National level.
10. Types of gardens.
11. Lawn marketing.
12. Cacti and succulents
13. Write in detailed about plants grow in water garden.
14. Objectives of Traditional Knowledge.
15. Scope of landscape gardening.
16. Uses of Teak.
17. Minor garden implements.
18. TKDL.
19. Maceration technique.
20. Write in detailed about rock garden.

21. Importance of terrace garden.
22. Comment upon water garden
23. Important Gardens of India.
24. Problems facing in lawn preparation.
25. What is the difference between Bio-prospecting and Biopiracy?
26. Objectives of National gene bank.
27. Comment upon Traditional Knowledge.
28. Comment upon Tissue preparation.
29. Difference between Stain and dyes.
30. Write different cytogenetic techniques.
31. Write in short importance of Olericulture and Arboriculture.