

(BIC20112)

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Second Semester

Biochemistry

Paper I: PLANT BIOCHEMISTRY

(Regulation - 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions choosing ONE from each unit.

UNIT I

1. Explain enzymatic and non enzymatic components of antioxidative defence mechanism in plants. (14)

Or

2. (a) meristematic cells (7)  
(b) Cell wall. (7)

UNIT II

3. Write an account on photophosphorylation. (14)

Or

4. (a) Photosystem II (7)  
(b) Chlorophylls. (7)

UNIT III

5. Describe photochemical and hormonal control in plants. (14)

Or

6. (a) Auxins (7)  
(b) Cytokinins. (7)

UNIT IV

7. Describe the nature, distribution, biosynthesis and functions of tannins. (14)

Or

8. (a) Heavy metals (7)  
(b) Radiation and their impact on plant growth. (7)

UNIT V

9. Describe the structure and mechanism of action of Nitrogenase. (14)

Or

10. (a) Sulphate assimilation. (7)  
(b) Hydrogen evolution and uptake. (7)

**(BIC20212)**

M.Sc. DEGREE EXAMINATION, APRIL 2018.

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Biochemistry

Paper II — INTERMEDIARY METABOLISM

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions, choosing ONE from  
each Unit.

UNIT I

1. Describe TCA cycle its function and regulation. (14)

Or

2. (a) HMP shunt and its regulation. (7)  
(b) Peptidoglycon. (7)



## UNIT II

3. Describe the role of pyridoxal phosphate in amino acid metabolism. (14)

Or

4. (a) Ketogenic and glycolytic amino acids. (7)  
(b) Formation of ammonia and urea. (7)

## UNIT III

5. Write an account on biosynthesis and degradation of Histidine. (14)

Or

6. (a) Tyrosine. (7)  
(b) Glutamate. (7)

## UNIT IV

7. Describe the regulation of fatty acid metabolism. (14)

Or

8. (a) Metabolism of Arachidonic acid. (7)  
(b) Prostaglandins. (7)

## UNIT V

9. Write an account on biosynthesis and degradation of Pyrimidines and their regulation. (14)

Or

10. (a) Biosynthesis and degradation of Heme. (7)  
(b) Polynucleotides. (7)

**(BIC20312)**

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Second Semester

Biochemistry

**Paper III — MICROBIAL BIOCHEMISTRY**

(Regulation 2012)

Time : Three hours

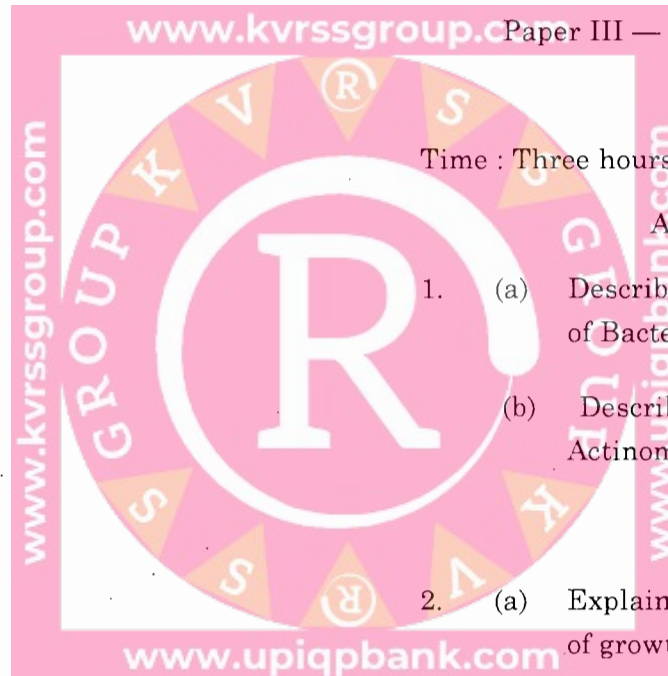
Maximum : 70 marks

Answer ALL question.

1. (a) Describe the Bergy's. manual of classification of Bacteria.
- (b) Describe the general characters of Actinomycetes and yeasts.

Or

2. (a) Explain bacterial growth phases and kinetics of growth.
- (b) Describe the physical and chemical factors effecting growth of Bacteria.



3. (a) Describe the Design of fermenters and their uses.  
(b) Describe the fermentation production of Vitamin Riboflavin.

Or

4. (a) Explain fermentation product recovery with specific examples.  
(b) Describe the principle, and applications of Dark field microscopy.
5. (a) Write an account on the sterilization and disinfection.  
(b) Describe the role of microorganisms in domestic sewage.

Or

6. (a) Describe the methods of nutrition in bacteria.  
(b) Enumerate the food spoilage and its control.
7. (a) Write an account on Pneumonia.  
(b) Discuss about Gonorrhea.

Or

8. (a) Describe Air borne diseases, such as Meningitis and Diphtheria.  
(b) Write an account on Tetanus and sepsis.
9. (a) Describe the life cycles of Bacteriophages.  
(b) Write an account on tomato yellow leaf curl viruses.

Or

10. (a) Explain lytic and lysogenic cycle in lambda phase.  
(b) Enumerate HIV.

(BIC20412)

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Paper IV — MOLECULAR BIOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

1. Describe the mechanism of formation of oriC open complex. (14)

Or

2. (a) Fidelity of DNA replication. (7)  
(b) Histone dissociation (7)
3. Describe upstream activating sequences and their role in regulation of transcription. (14)

Or

4. (a) Monocistronic m RNA (7)  
(b) Transcription factors. (7)

5. Enumerate Genetic code and its elucidation. (14)

Or

6. (a) Events of protein synthesis (7)  
(b) Inhibitors of translation. (7)

7. Describe the Gene expression as influenced by environmental factors. (14)

Or

8. (a) trp operon in E.coli (7)  
(b) Yeast gal genes. (7)

9. Describe molecular bases of mutations. (14)

Or

10. (a) Role of rec gene in DNA repair (7)  
(b) Mechanism of mutagenesis. (7)