

**(BIC20112)**

M.Sc. DEGREE EXAMINATION, APRIL 2017.

Second Semester

Biochemistry

Paper I — PLANT BIOCHEMISTRY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

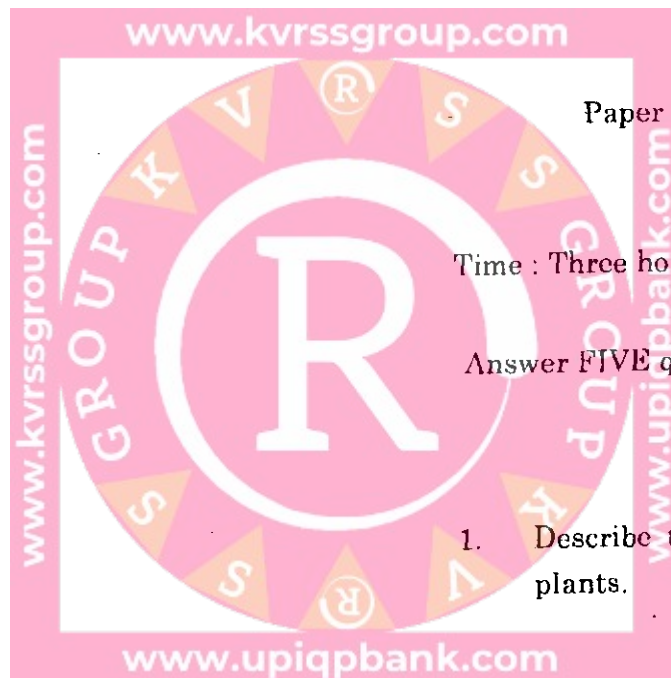
Answer FIVE questions choosing ONE from each Unit.

**UNIT I**

1. Describe the anti oxident defense mechanism in plants. (14)

Or

2. (a) Plasmic desmeta. (7)  
(b) Differentiate absorption and adsorption. (7)



## UNIT II

3. Give a detailed account on chloroplast ATP synthase. (14)

Or

4. Write short note on :

- (a) Photo system II. (7)  
(b) Explain the significance of photo respiration. (7)

## UNIT III

5. Explain the structure, function and mechanism of action of cytokinins. (14)

Or

6. (a) Add a note on seed dormancy. (7)  
(b) Photochemical and hormonal control in plants. (7)

## UNIT IV

7. Write an essay on secondary metabolites in plants. (14)

Or

8. (a) Explain the criteria of stress tolerance. (7)  
(b) Impact of heavy metals on plant growth. (7)

## UNIT V

9. (a) Explain the strategies for protection of nitrogenase. (7)

- (b) Give a brief on Legume-Rhizobium symbiosis. (7)

Or

10. (a) nif genes of klebsiella pneumoniae. (7)

- (b) nitrate reduction and assimilation. (7)

**(BIC20212)**

M.Sc. DEGREE EXAMINATION, APRIL 2017.

Second Semester

Biochemistry

Paper II — INTERMEDIARY METABOLISM

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions, One from each unit.

All questions carry equal marks.

(5 × 14 = 70)

**UNIT I**

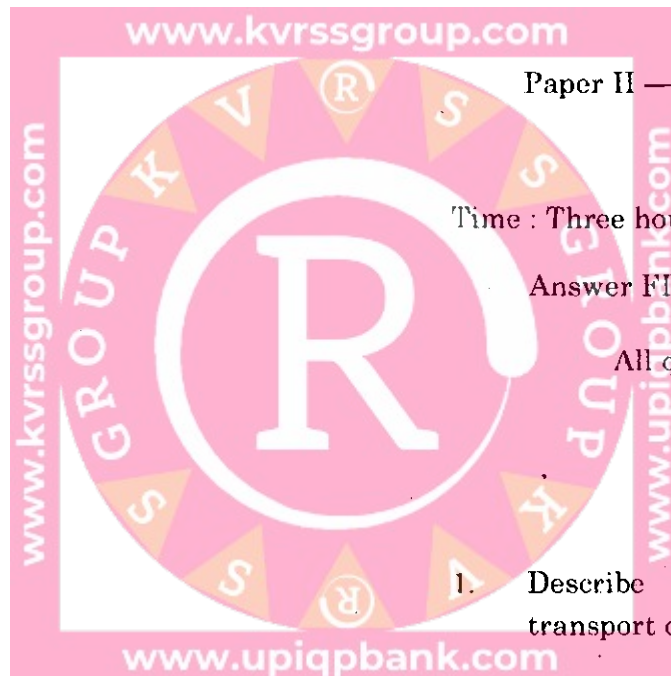
1. Describe the complexes involved in electron transport chain. (14)

Or

2. Write short notes on :

(a) Glycoproteins. (7)

(b) Peptidoglycans. (7)



## UNIT II

3. Discuss general metabolic reactions of amino acids. (14)

Or

4. Write short notes on :

- (a) Glycogenic and Ketogenic amino acids. (7)  
(b) Regulation of urea cycle. (7)

## UNIT III

5. Discuss about biosynthesis of any three essential amino acids.

Or

6. Write short notes on :

- (a) Degradation of histidine. (7)  
(b) Degradation of tryptophan. (7)

## UNIT IV

7. Discuss in detail Biosynthesis of fatty acids. (14)

Or

8. Write short notes on :

- (a) Fats as energy stores. (7)  
(b) Ketone bodies metabolism. (7)

## UNIT V

9. Explain the structure and regulation of ribonucleotide reductase. (14)

Or

10. Write short notes on :

- (a) Inhibitors of nucleic acid biosynthesis. (7)  
(b) Importance of biogenic amines. (7)

**(BIC20312)**

M.Sc. DEGREE EXAMINATION, APRIL 2017

Second Semester

Biochemistry

Paper III — MICROBIAL BIOCHEMISTRY

(Regulation 2012)

Time : Three hours

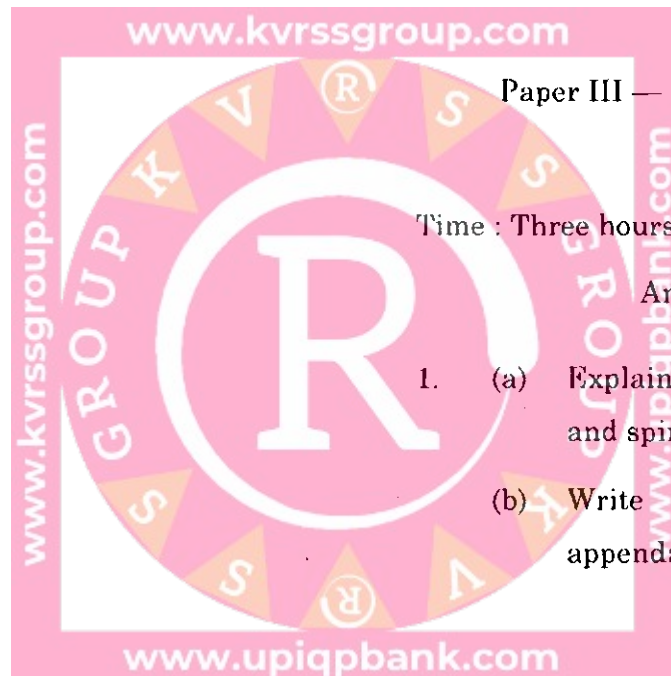
Maximum : 70 marks

Answer ALL questions.

1. (a) Explain the general characteristics of yeasts and spirochetes.  
(b) Write a note on bacterial external appendages.

Or

2. (a) Write an essay on phases of bacterial growth.  
(b) Write a note on culture media employed for the bacterial growth.



3. (a) Explain the principle and instrumentation of dark field microscopy.  
(b) Write short notes on down stream processing.

Or

4. (a) Discuss the fermentative production of citric acid and alcohol.  
(b) Write short notes on applications of transmission electron microscopy.  
5. (a) Explain the terms chemotrophy and methylotrophic modes of nutrition.  
(b) Write short notes on physical methods of sterilization.

Or

6. (a) Explain the terms parasitism and symbiosis in microbial interactions.  
(b) Write notes on the role of microorganisms in industrial sewage.  
7. (a) Discuss about food borne diseases such as botulism and staphylococcal food poisoning.  
(b) Write a note on meningites.

Or

8. (a) Discuss the etio pathology of Anthrax and sepsis.  
(b) Write a note on the epidemiology of syphilis.

9. (a) Explain lytic and lysogenic cycle in lambda phage in detail.  
(b) Write short notes on virus-host interactions.

Or

10. (a) Describe briefly the general features and outlines of Dengue.  
(b) Write a note on Peanut clump virus.

**(BIC20412)**

**M.Sc. DEGREE EXAMINATION, APRIL 2017.**

**Second Semester**

**Biochemistry**

**Paper IV — MOLECULAR BIOLOGY**

**(Regulation 2012)**

**Time : Three hours**

**Maximum : 70 marks**

**Answer FIVE questions, choosing ONE from each Unit.**

**All questions carry equal marks.**

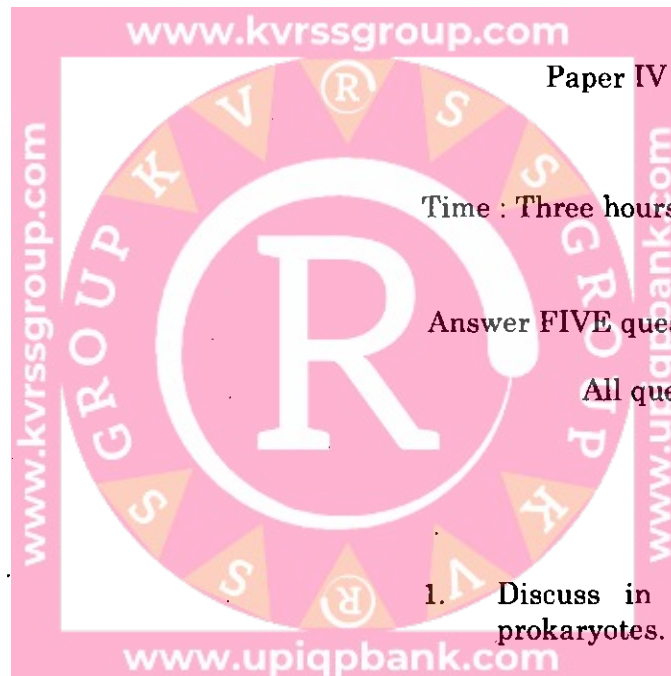
**(5 × 14 = 70)**

**UNIT I**

1. Discuss in detail the replication of DNA in prokaryotes. (14)

**Or**

2. (a) Replication of Single Stranded DNA. (7)  
(b) Inhibitors of DNA replication. (7)



## UNIT II

3. Discuss about Transcription Mechanism in Prokaryotes. (14)

Or

4. Write a short note on :

- (a) Transcription factors in Eukaryotes. (7)  
(b) Inhibitors of Transcription. (7)

## UNIT III

5. Explain Genetic Code and its elucidation. (14)

Or

6. (a) Post translational modifications of Proteins. (7)  
(b) Inhibitors of Translation. (7)

## UNIT IV

7. Explain steroid hormone induced gene expression what is the influence of environmental factors on Gene expression. (14)

Or

8. Write short note on :

- (a) Yeast gal genes. (7)  
(b) Regulation of nif gene expression in Klebsiella pneumonia. (7)

## UNIT V

9. Write an account on site-directed mutagenesis and its application. (14)

Or

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