**M.Sc. [Medical Biochemistry]**

**BF/2016/03**

# Molecular Biology

# [Paper - I]

**M.M. : 100 Time : 3 Hours**

*Note : Attempt all questions.*

***Briefly discuss the following*** *:-*

1. Name different RNAs and discuss their structure. [10]

2. Discuss different types of DNA damages, and their repair mechanisms. [10]

3. Give a detailed account of the Transcription Process. How it is regulated ? Name inhibitors of Transcription. [10]

4. Describe the steps of Protein Synthesis. [10]

5. Describe Lactose (lac) Operon. [10]

6. Give an account of Genetic Engineering. What are the important applications of genetic engineering ? [10]

7. Give an account of the pharmaceutical products of DNA technology. [10]

8. Give an account of DNA finger printing. [10]

9. Give an account of Western blotting. [10]

10. Give an account of DNA chips. [10]

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# Immunochemistry

# [Paper - II]

**M.M. : 100 Time : 3 Hours**

*Note : Attempt all questions.*

1. Illustrate the structure of Immunoglobulin with the help of a labeled diagram. Mention the functions of individual parts . [10]

2. Name different types of T- lymphocytes and describe their functions . [10]

3. Discuss briefly : [5x2=10]

 (a) T-cell activation pathway involved in allograft rejection.

 (b) Effector mechanism of allograft rejection.

4. Explain the molecular basis of autoimmune disorders giving suitable examples. [10]

5. Write short notes on : [10]

 (a) Cytotoxic T- cells.

 (b) MHC Proteins.

6. Discuss briefly: [5x2=10]

 (a) Role of HLA identification in solid organ transplant.

 (b) Role of thymus in T-cell development.

7. Differentiate between : [5x2=10]

 (a) Innate and Acquired immunity.

 (b) Monoclonal and Polyclonal antibodies.

8. Discuss the classical pathway of Complement system. Write a note on its associated diseases. [10]

9. Write short notes on : [5x2=10]

 (a) Immunosuppression.

 (b) Basis of passive immunization.

10. Outline the biological significance and mechanism of antibody diversity.

[10]

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# Nutrition & Dietetics

# [Paper - III]

**M.M. : 100 Time : 3 Hours**

*Note : Attempt all questions.*

1. Describe the composition of Balanced Diet for non- vegetarian adult male moderate workers. [10]

2. Describe Nutritional importance of Proteins in the diet . [10]

3. Discuss the measurement of BMR by closed circuit method. [10]

4. Discuss the disease associated with inadequate intake of Calories. [10]

5. Discuss the Night Blindness & Xerophthalmia. [10]

6. Justify with your comments that Obesity is nutritional disorder of over-nutrition. [10]

7. Describe the recommended daily allowance of nutrients for Infant. [10]

8. Discuss the Thermogenic action of Food Stuff. [10]

9. Discuss the biochemical changes that occur in Old age. [10]

10. Discuss the biochemical function of Sodium. [10]

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# Clinical Biochemistry and Medical Statistics

# [Paper - IV]

**M.M. : 100 Time : 3 Hours**

*Note : Attempt all questions.*

1. Clinical significance of Serum Isoenzymes. [10]

2. Deficiency manifestations of Vitamin - A. [10]

3. Inherited metabolic disorder of Purine Catabolism. [10]

4. Clinical Significance of Oral Glucose Tolerance Test. [10]

5. Discuss strategies to reduce Pre-analytical Errors in Laboratory. [10]

6. Role of renal mechanisms involved in maintenance of Blood pH. [10]

7. Disorders associated with deficiency of Growth Hormone. [10]

8. Discuss abnormal Haemoglobin. [10]

9. Hypercalcaemia and Hypocalcaemia. [10]

10. Estimation of total protein by Biuret method. [10]

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