Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - May 2011

[Time: 3 Hours] [Max. Marks: 100]

BIOCHEMISTRY - I

Q.P. CODE : 9671

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary. **Section A and section B are to be written in same Answer Book**

Section A - Clinical Biochemistry [50 marks]

LONG ESSAY 1 X 20 = 20 Marks

1. Discuss the chemistry and structure of B-DNA and compare with different types of DNA double helix. Add a note on chargaff's rule.

SHORT ESSAY 5 X 6 = 30 Marks

2. Explain the estimation of alkaline phosphatase and acid phosphatase by king's method.
3. How are phospholipids classified? Give suitable examples.
4. List the examples for sphingolipidoses with their characteristics.
5. What are the various factors affecting enzyme activity? Explain.
6. Describe the structure and types of RNA.

Section B - Biomedical Techniques & Lab. Management [50 marks]

LONG ESSAY 1 X 20 = 20 Marks

7. Discuss the principles, experimental procedures and application of paper, thin-layer and ion exchange chromatographic techniques.

SHORT ESSAY 5 X 6 = 30 Marks

8. Explain the principle and applications of spectrofluorimetry.
9. Give an account of professional ethics in laboratory management.
10. Discuss the designing of laboratories for different types and sizes of institutions.
11. Enumerate the types, potential risks and safe management of bio-medical waste materials.
12. Explain the use of computers in quality control and management.

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - May 2011

[Time: 3 Hours] [Max. Marks: 100]

HAEMATOLOGY AND BLOOD TRANSFUSTION - I

Q.P. CODE : 9673

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary. **Section A and section B are to be written in same Answer Book**

Sectioin A - Haematology and Clinical Pathology [50 Marks]

LONG ESSAY **1 X 20 = 20 Marks**

1. Define Anemia. Describe briefly the laboratory investigations done in a case of anemia.

SHORT ESSAY **5 X 6 = 30 Marks**

2. Discuss Philadelphia chromososome.
3. Discuss in detail the collection of sputum and its physical and chemical examination.
4. Explain the principle, procedure and significance of the osmotic fragility test.
5. Elaborate on the investigations of hemorrhagic disorders.
6. Discuss the indication, contraindication and methods of obtaining CSF for analysis.

Section B - Immunology and Medical Genetics [50 Marks]

LONG ESSAY **1 X 20 = 20 Marks**

7. Discuss in detail the indications for kidney transplant. Enumerate the laboratory investigations required.

SHORT ESSAY **5 X 6 = 30 Marks**

8. Discuss Arthus reaction.
9. Describe in detail autosomal recessive inheritance and give an example.
10. What is Coomb's test? Give a detailed description of the direct and indirect methods.
11. Discuss morphology of organs in Gaucher's disease.
12. Give a brief note on recent developments in the field of medical genetics.

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - May 2011

[Time: 3 Hours] [Max. Marks: 100]

MICROBIOLOGY - I

Q.P. CODE : 9672

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary. **Section A and section B are to be written in same Answer Book**

Section A – Clinical Microbiology [50 marks]

LONG ESSAY 1 X 20 = 20 Marks

1. Describe the etiology, pathogenesis and laboratory diagnosis of syphilis

SHORT ESSAY 5 X 6 = 30 Marks

2. Chemical methods of sterilization
3. Bacteriological analysis of water
4. Laboratory diagnosis of HIV infection
5. Hydatid cyst
6. Opportunistic fungal infections

Section B – Immunology and Molecular Biology [50 marks]

LONG ESSAY 1 X 20 = 20 Marks

7. Define immunity. Classify types of immunity. Describe in detail the mechanisms of Accquired immunity

SHORT ESSAY 5 X 6 = 30 Marks

8. The complement system
9. Types of RNA and their functions
10. Vectors used in recombinant DNA technology
11. Polymerase chain reaction
12. Primary immune response

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - Nov 2011

[Time: 3 Hours] [Max. Marks: 100]

BIOCHEMISTRY - I

Q.P. CODE : 9671

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary. **Section A and section B are to be written in same Answer Book**

Section A - Clinical Biochemistry [50 marks]

LONG ESSAY **1 X 20 = 20 Marks**

1. What are the abnormal components of urine? Explain the conditions in which these substances are excreted in urine.

SHORT ESSAY **5 X 6 = 30 Marks**

2. Biochemical manifestations and compensatory mechanism of metabolic acidosis.
3. Classify amino acids by giving suitable examples.
4. Give an account of high energy compounds.
5. What are plasma globulins? Give their functions
6. How do you estimate sugar and proteins in CSF

Section B - Biomedical Techniques & Lab. Management [50 marks]

LONG ESSAY **1 X 20 = 20 Marks**

7. Describe quality assurance emphasizing total quality management, development and monitoring of performance indicators.

SHORT ESSAY **5 X 6 = 30 Marks**

8. Outline the principle and procedure of agarose gel electrophoresis
9. Write the principle and applications of spectrophotometry.
10. Discuss the principle and application of density gradient centrifugation technique.
11. Sketch the components of an electron transport chain indicating the sites of ATP generation, inhibitors and uncouplers. What is oxidative phosphorylation?
12. Explain the methods of cell fractionation.

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - Nov 2011

[Time: 3 Hours] [Max. Marks: 100]

MICROBIOLOGY - I

Q.P. CODE : 9672

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary. **Section A and section B are to be written in same Answer Book**

Section A – Clinical Microbiology [50 marks]

LONG ESSAY **1 X 20 = 20 Marks**

1. Describe the morphology, lifecycle, pathogenecity and laboratory diagnosis of Entamoeba histolytica.

SHORT ESSAY **5 X 6 = 30 Marks**

2. Bacteriological analysis of water.
3. Preservation of bacterial cultures.
4. Laboratory diagnosis of pulmonary Mycobacterium tuberculosis
5. Pathogenesis of Vibrio cholerae.
6. Laboratory diagnosis of Cryptococcus meningitis

Section B – Immunology and Molecular Biology [50 marks]

LONG ESSAY **1 X 20 = 20 Marks**

7. Define immunity, classify types of immunity. Describe in detail the mechanisms of innate immunity.

SHORT ESSAY **5 X 6 = 30 Marks**

8. Natural killer cells
9. Mutations in bacteria
10. Structure of MHC molecules.
11. Primary immune response
12. DNA finger printing.

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - Nov 2011

[Time: 3 Hours] [Max. Marks: 100]

HAEMATOLOGY AND BLOOD TRANSFUSTION - I

Q.P. CODE : 9673

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary. **Section A and section B are to be written in same Answer Book**

Sectioin A - Haematology and Clinical Pathology [50 Marks]

LONG ESSAY **1 X 20 = 20 Marks**

1. Classify myeloproliferative disorders. Describe briefly the laboratory investigations done.

SHORT ESSAY **5 X 6 = 30 Marks**

2. Discuss tests done in a case of coagulation disorder.
3. Discuss in detail the collection of urine and its examination by the strip method.
4. Explain the principle, procedure and significance of the Sucrose lysis test.
5. Elaborate on the microscopic examination of ascetic fluid.
6. Discuss the morphology of macrocytic anemia.

Section B - Immunology and Medical Genetics [50 Marks]

LONG ESSAY **1 X 20 = 20 Marks**

7. Give an overview of sex determination. Discuss the methods of chromosomal analysis.

SHORT ESSAY **5 X 6 = 30 Marks**

8. Discuss the detail the indications for a heart transplant.
9. Describe in detail granulomatous reaction with an example.
10. Discuss the immunology of AIDS
11. Discuss the pathogenesis of Tay sach's disease.
12. Give a brief note on the human genome project.

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