Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL-2019

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

Biochemistry – I

(Revised Scheme – 2)

Q.P. CODE: 9811

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. Give an account of urine collection in a laboratory and its preservation, storage, transport and disposal. Add a note on physical and chemical examination of urine samples.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

2. Write a note on BMR and the factors affecting it.
3. Classification of enzymes with examples.
4. Lipid profile and coronary artery diseases
5. Acid base disorders
6. Clinical significance of creatinine. Write the principle of estimation.
7. Explain competitive and non-competitive enzyme inhibition with examples.
8. Note on oral glucose tolerance test
9. Structural organization of proteins

Section B – Laboratory Principles & Techniques [50 marks]

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

10. Write the principle of centrifugation. Discuss in detail on the types and applications of centrifuges. Add a note on cell fractionation.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

11. Potentiometry
12. Agarose Gel electrophoresis
13. Use, care and maintenance of analytical weighing balance
14. Principle and applications of affinity chromatography
15. Cleaning of glasswares
16. Quality control in a laboratory
17. Write about general safety laboratory practice.
18. Principle and applications of colorimetry

Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL-2019

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

MICROBIOLOGY – I

(Revised Scheme – 2)

Q.P. CODE: 9812

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. Name the different Spirochaetes and diseases caused by them. Describe the laboratory diagnosis of Syphilis.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

2. Life cycle of Plasmodium falciparum
3. Bacteriology of water
4. Laboratory diagnosis of Typhoid fever
5. Clinical manifestations and lab diagnosis of Candidiasis
6. Bacterial spore
7. Modes of transmission of hospital acquired infections
8. Pathogenesis of Wuchereria bancrofti
9. Prophylaxis of Polio. Add a note on pulse polio program.

Section B – Immunology and Molecular Biology [50 marks]

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

10. Define and classify Hypersensitivity reactions. Give a detailed account of Type I Hypersensitivity.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

11. ELISA
12. Immunization schedule
13. Flow cytometry
14. Types and function of T – cells
15. Alternate complement pathway
16. IgA Antibody – structure, properties and function
17. Mechanism of auto immunity
18. Gene therapy

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL-2019

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

Haematology and Blood Transfusion – I
(Revised Scheme – 2)
Q.P. CODE: 9813

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 – Haematology and Clinical Pathology [50 marks]

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

1. Classify Leukemias. Discuss morphology and diagnostics investigations of acute leukemias.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

2. Thalassemia
3. Sputum examination
4. Discuss the indication, sites and techniques of bone marrow aspiration.
5. Leucocytosis and its clinical significance
6. Lab diagnosis of Megaloblastic anemia
7. Philadelphia chromosome
8. Biomedical waste management
9. Pregnancy tests

Section B – Immunopathology and Medical Genetics [50 marks]

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

10. Describe a granuloma, give four examples of granulomatous diseases. Discuss about Tuberculosis.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

11. Rh typing of blood
12. Delayed hypersensitivity reactions
13. Autosomal recessive inheritance
14. Compatibility testing
15. Down's syndrome
16. Donor selection criteria for blood donation
17. Autoimmune hemolytic anemias
18. Tumor markers

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - SEP-2019

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

Biochemistry – I

(Revised Scheme – 2)

Q.P. CODE: 9811

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 structural organization of proteins. Explain the determination of primary structure.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

2. Applications of radioactive isotopes
3. Acquisition of body fluids in a laboratory and criteria for their rejection
4. Nutritional importance of carbohydrates and lipids
5. Use, care and maintenance of glucometers
6. Creatinine clearance test
7. Biochemical analysis of CSF
8. Diagnostic importance of enzymes
9. Oral glucose tolerance test

Section B – Laboratory Principles & Techniques [50 marks]

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

10. Discuss the various aspects of clinical laboratory designing in detail. Write about total quality management in a laboratory.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

11. Training of technical staff in a laboratory
12. Principle and applications of osmometry
13. Quality control charts
14. Different types of glasswares and their cleaning
15. Safety regulations for disposal of chemical and biohazardous wastes
16. Write the principle, procedure and applications of thin layer chromatography of amino acids.
17. Cell fractionation
18. Note on pH meter

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - OCT-2019

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

MICROBIOLOGY – I

(Revised Scheme – 2)

Q.P. CODE: 9812

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. Mention the intestinal nematode. Give an account of the morphology, life cycle, pathogenicity, laboratory diagnosis of Ascaris lumbricoides.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

2. Prophylaxis of Rabies
3. Dengue
4. Laboratory diagnosis of Tuberculosis
5. Autoclave
6. Robert Koch - contributions
7. Clinical manifestations of Candida albicans
8. Laboratory diagnosis of Hepatitis B virus infection
9. Antibiotic sensitivity test

Section B – Immunology and Molecular Biology [50 marks]

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

10. Define and classify Immunity. Write in detail about Innate Immunity.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

11. Type I Hypersensitivity
12. Structure of MHC class I and class II molecules
13. Transduction
14. Structure of immunoglobulins
15. Mechanism of Autoimmunity
16. Replication of DNA
17. B cell
18. Immunization schedule

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - OCT-2019

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

Haematology and Blood Transfusion – I

(Revised Scheme – 2)

Q.P. CODE: 9813

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 – Haematology and Clinical Pathology [50 marks]

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

1. Classify Acute Myeloid Leukemia according to FAB classification. Mention various cytochemical stains and their applications in diagnosis of Leukemias. List out the lab investigations in acute leukemias.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

2. Describe grading and various tests used to detect proteinuria.
3. Hemoglobin Electrophoresis – principle and clinical applications.
4. CSF analysis in Meningitis
5. Thalassemia – pathogenesis and blood picture
6. Describe principles of automated hematology analyser.
7. Discuss stool examination.
8. Bone marrow aspiration procedure and preparation of bone marrow smears
9. Sickle cell anemia

Section B – Immunopathology and Medical Genetics [50 marks]

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

10. Discuss modes of infection pathogenesis, stages and CD4 count in AIDS. Add a note on opportunistic injections in AIDS.

SHORT ESSAY (Attempt any six) **6 X 5 = 30 Marks**

11. Autoimmune haemolytic anemia – types and diagnosis
12. Pretransfusion testing of blood
13. Diagnosis of Systemic Lupus Erythematosus (SLE)
14. Type I hypersensitivity reactions
15. Bombay blood grouping
16. HLA typing
17. Down’s syndrome
18. Diagnosis of transfusion transmitted diseases in blood bank

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