Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL-2018

[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. Explain the role of bicarbonate and phosphate buffer systems in regulating the pH of body fluids. Explain the analysis of arterial blood gases in detail with reference intervals.

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

2. Protein energy malnutrition
3. Creatinine clearance test
4. Structural organization of Proteins
5. Explain the types of Diabetes Mellitus (DM). Describe the role of glycated HbA1c in management of DM.
6. Clinical importance of uric acid and add a note on Qualitative and Quantitative method for estimation of uric acid
7. Classify enzymes with examples.
8. Explain LDL metabolism. Add a note on Atherosclerosis.
9. Nutritional importance of carbohydrates and proteins

Section B – Laboratory Principles & Techniques [50 marks]

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

10. Give the principle of Freezing point depression Osmometry. Explain the components of Osmometer with a suitable diagram. Add a note on the regular maintenance and applications of the Osmometer.

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

11. Internal and external quality control
12. Disposal of chemical, radioactive and bio-hazardous Waste
13. Documentation in clinical laboratory
14. LJ charts and Westgard Rules
15. Potentiometry
16. Explain thin layer chromatography of amino acids.
17. Explain atomic absorption spectrophotometry.
18. Explain cell fractionation.

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL-2018

[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. Describe the etiology, pathogenesis and laboratory diagnosis of Enteric fever.

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

2. Bacterial flagella
3. Laboratory diagnosis of Shigellosis
4. Sterilization by dry heat method
5. Life cycle of Ancyclostoma duodenale
6. Bacterial flora present in milk and its analysis
7. Prophylaxis of rabies
8. Laboratory diagnosis of Candidiasis
9. Laboratory diagnosis of Hepatitis B infection

Section B – Immunology and Molecular Biology [50 marks]

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

10. Define and classify immunity. Explain in detail about innate immunity.

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

11. Immunofluorescence
12. Anaphylaxis
13. Define auto immunity. Explain in detail about the mechanism of autoimmunity.
14. Describe the steps in Classical complement pathway.
15. Differences between T and B cells
16. Describe the structure and functions of Ig G.
17. Types of RNA of their functions
18. Applications of recombinant DNA technology in medicine

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL 2018

[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. Define and classify Anemias. Describe in detail the laboratory work up in a case of hemolytic anemia. Discuss Coomb's test.

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

2. Describe bone marrow findings and laboratory diagnosis of Megaloblastic anemia.
3. Describe the first line of laboratory tests in a case of hemorrhagic disorder.
4. Hospital waste management
5. Internal quality control in hematology laboratory
6. Describe urine microscopy in detail.
7. Describe pregnancy tests in detail.
8. Chronic myeloid leukemia
9. Discuss cytochemical stains used in leukemias.

Section B – Immunopathology and Medical Genetics [50 marks]

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

10. Mention the important blood group systems and discuss in detail the ABO system. Write a note on transfusion transmitted disease and their prevention.

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

11. Type IV hypersensitivity reaction
12. Discuss pathogenesis of autoimmune disorders with two examples.
13. HLA typing
14. Donor selection criteria for blood donation
15. Detection of Barr body
16. Write in detail about post transfusion work up.
17. Mendel's law of inheritance
18. Turner's syndrome

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - SEP-2018

[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. Define and classify diabetes mellitus. Explain the biochemical alterations and clinical features associated with it. Write the procedure and interpretation of OGTT.

SHORT ESSAY (Attempt Any Six) **6 X 5 = 30 Marks**

2. Write the clinical significance of uric acid and add a note on gout.
3. Use, care and maintenance of Glucometers
4. Biochemical functions of albumin
5. Cerebrospinal fluid biochemical analysis and its clinical significance
6. Classify lipoproteins and add a note on their functions.
7. Define and classify enzymes with examples.
8. Explain acidosis and alkalosis with examples.
9. Arterial blood gas estimation

Section B – Laboratory Principles & Techniques [50 marks]

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

10. Explain the principle and types of chromatography. Write in detail about HPLC.

SHORT ESSAY (Attempt Any Six) **6 X 5 = 30 Marks**

11. Preparative and analytical centrifugation
12. Documentation and maintenance of laboratory records
13. Principle, instrumentation and applications of flame emission spectrophotometry
14. Ion exchange chromatography
15. Explain work simplification process in a clinical lab with reference to (a) reagent and solvent dispensing system (b) sample transport and delivery
16. Explain serum protein electrophoresis.
17. Discuss cell fractionation.
18. Explain factors affecting the productivity of a laboratory.

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - SEP-2018

[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. Describe the morphology and life cycle of E. histolytica. Discuss the pathogenesis and laboratory diagnosis of amoebic dysentery.

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

2. Bacterial cell wall
3. Dark ground microscopy
4. Describe the lesions caused by Herpes Simplex Viruses and their laboratory diagnosis.
5. Principle, procedure and interpretation of Widal test
6. Laboratory diagnosis of cholera
7. Pathogenesis and laboratory diagnosis of hydatid disease
8. Laboratory diagnosis of dermatophytosis
9. Dengue

Section B – Immunology and Molecular Biology [50 marks]

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

10. Define and classify immunity. Describe innate immunity in detail.

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

11. Type I hypersensitivity
12. Give a brief account of Cell mediated immunity.
13. Ig G antibody – structure, properties and function
14. Agglutination reactions
15. Biologic effects of complement
16. Differences between T & B cells
17. DNA finger printing
18. Conjugation

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Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - SEP-2018

[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. Explain the principle, procedure and significance of haemoglobin Electrophoresis. Add a note on other lab investigations in hemolytic anemias.

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

2. Discuss the indication, contraindication and methods of obtaining CSF for analysis.
3. Pregnancy test
4. Sickling test
5. Discuss organization and quality control in the laboratory.
6. Multiple myeloma
7. Sputum examination
8. Lab investigations of acute leukemias
9. Lab investigations of Megaloblastic anemia

Section B – Immunopathology and Medical Genetics [50 marks]

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

10. Define autoimmunity. List the autoimmune disorders. Discuss the mechanisms of autoimmune disease. List the tests for establishing the diagnosis.

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

11. Briefly describe the immunopathology of SLE (Systemic Lupus Erythematosis)
12. What is Coomb's test? Give a detailed description of the direct and indirect method.
13. Discuss the genetics of hemophilia.
14. Give a brief note on recent developments in the field of medical genetics and its applications.
15. Discuss the immunopathology of AIDS.
16. Screening of blood products
17. Pretransfusion testing of blood
18. X-linked disorders

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