Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - OCT - 2017

[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 **2 X 10 = 20 Marks**

1. Comment on the role of buffer systems in regulating the pH of body fluids. Add a note on acid-base disorders.

2. Define and classify proteins with suitable examples. Write about isoelectric pH of proteins.

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

3. How do you estimate serum uric acid? Give the normal level of uric acid in serum.

4. Plasma proteins – their functions and clinical significance

5. Note on serum electrolytes

6. Isoenzymes and their clinical importance

7. Isomerism of monosaccharides

Section B – Laboratory Principles & Techniques [50 marks]

LONG ESSAY **2 X 10 = 20 Marks**

8. Define centrifugation. Elaborate on the types and applications of centrifugation.

9. Define electrophoresis. Discuss the principle, procedure and applications of Polyacrylamide gel electrophoresis.

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

10. Principle and applications of Colorimetry

11. Quality control in a clinical laboratory

12. Glasswares and plasticwares used in a laboratory

13. SI units

14. Atomic absorption spectrophotometry

* * * * *

Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - OCT – 2017

[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 protozoa causing gastro intestinal infections. Describe the morphology, life cycle, pathogenicity and laboratory diagnosis of Entamoeba histolytica.

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

2. VDRL test
3. Laboratory diagnosis of dermatophytosis
4. Autoclave
5. Antibiotic sensitivity test
6. Biomedical waste disposal
7. Laboratory diagnosis of HIV
8. Life cycle of Ascaris lumbricoides
9. Bacterial Flagella

Section B – Immunology and Molecular Biology [50 marks]

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

10. Define and classify hypersensitivity reaction. Explain Type I hypersensitivity in detail.

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

11. IgG
12. ELISA
13. Mechanism of Autoimmunity
14. PCR
15. Gene therapy
16. Difference between T and B cell
17. Innate Immunity

18 Determinants of antigenicity

* * * * *

Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination – OCT-2017

[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 **2 X 10 = 20 Marks**

1. What is Hemolysis? Classify hemolytic anemias. Add a note on Reticulocyte count assessment.
2. Write in detail on the indications and collection of Cerebro Spinal Fluid (CSF). Add a note on the CSF examination findings in bacterial meningitis.

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

3. Peripheral blood and bone marrow findings in megaloblastic anemia
4. Laboratory diagnosis of Chronic Myeloid Leukemia
5. Semen analysis
6. Discuss management of biomedical waste.
7. Laboratory diagnosis of malaria

Section B – Immunopathology and Medical Genetics [50 marks]

LONG ESSAY **2 X 10 = 20 Marks**

8. Write in detail the procedure for peripheral lymphocyte culture in Human Genetics.
9. What is autoimmunity? Give examples of autoimmune diseases. Discuss the pathogenesis and laboratory investigation of any one of them.

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

10. Mention and explain any one special banding technique.
11. Discuss granulomatous reaction.
12. Write short note on Buccal smear and its utility.
13. Pathogenesis of Erythroblastosis Fetalis
14. Explain the Mendel's law of inheritance with an example.

* * * * *

Rajiv Gandhi University of Health Sciences

II Year M.Sc. (MLT) Degree Examination – OCT-2017

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

BIOCHEMISTRY – II

Paper - I (Revised Scheme – 2)

Q.P. CODE: 9814

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. Write an essay on Thyroid Function Tests.

SHORT ESSAY **3 X 10 = 30 Marks**

2. Write in detail about new born screening.
3. Enumerate biliary tract diseases. Describe laboratory analysis of gall stones.
4. Discuss the composition, collection and biochemical analysis of CSF.

Section B – Laboratory Management [50 marks]

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

5. Discuss Total laboratory Automation in clinical biochemistry laboratory.

SHORT ESSAY **3 X 10 = 30 Marks**

6. Pre-analytical variables
7. Discuss POCT under following headings (a) Requirements (b) Classification (c) Applications.
8. Write sources, routes of entry, metabolism and overview of analysis of carbon monoxide, alcohol.

* * * * *

Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL 2017 [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 **2 X 10 = 20 Marks**

1. Patient management during specimen collection. Discuss preservation, transport, storage and disposal.
2. Give an account of the nutritional importance of carbohydrates, lipids and proteins.

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

3. Laboratory evaluation of paraproteinemia
4. Write a short note on Radioactive isotopes.
5. ACTH stimulation test
6. Regulation of pH in the body fluids
7. Determination of protein structure

Section B – Laboratory Principles & Techniques [50 marks]

LONG ESSAY **2 X 10 = 20 Marks**

8. Mention the types of Chromatography. Briefly explain Ion-Exchange Chromatography. Mention their applications.
9. Classify centrifugation techniques. Discuss cell fractionation.

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

10. Atomic absorption spectrophotometry
11. L. J. Charts
12. Discuss functional components of clinical laboratory.
13. Explain in detail Polyacrylamide gel electrophoresis.
14. Principles and applications of Osmometry

* * * *
*

Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL 2017

[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. Explain in detail about pathogenesis and laboratory diagnosis of Poliomyelitis. Add a note on its prophylaxis.

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

2. Bacterial cellwall
3. Sterilization by autoclave
4. Laboratory diagnosis of Cholera
5. Laboratory diagnosis of E. histolytica infection
6. Standard test for Syphilis (STS)
7. Laboratory diagnosis of Dermatophytosis
8. Biomedical waste management
9. Life cycle of Ascaris lumbricoides

Section B – Immunology and Molecular Biology [50 marks]

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

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

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

11. Mechanism of innate immunity
12. Alternate complement pathway
13. Enzyme Linked Immunosorbent Assay (ELISA)
14. Structure of immunoglobulins
15. Immunization schedule used in India
16. Natural Killer Cells
17. Gene therapy
18 Structure of DNA molecule

* * * * *

Rajiv Gandhi University of Health Sciences

First Year M.Sc. (MLT) Degree Examination - APRIL 2017

[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 **2 X 10 = 20 Marks**

1. Classify acute leukemias. Write in detail on the lab diagnosis of acute myeloblastic leukemias including a note on role of cytochemistry.
2. Enlist the causes of thrombocytopenia. Discuss the lab diagnosis of idiopathic thrombocytopenic purpura.

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

3. Lab diagnosis of iron deficiency anemia
4. What is Pancytopenia? List five causes of Pancytopenia.
5. Sickling test and its diagnostic utility
6. Explain the principle of Romanowsky stains. Give examples. Write the procedure of any one of them.
7. Dipstick method of urine analysis

Section B – Immunopathology and Medical Genetics [50 marks]

LONG ESSAY **2 X 10 = 20 Marks**

8. What is a granuloma? Write in detail the etiology and pathogenesis of tuberculosis.
9. Discuss the Mendelian laws of inheritance with examples.

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

10. Explain X linked inheritance with an example.
11. Laboratory diagnosis of various Meningitis and indications for Lumbar Puncture
12. Write short note on direct Coomb's test and its utility.
13. Discuss structural chromosome abnormalities.
14. Describe GTG banding technique.

* * * * *