Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 10-Jan-2022

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

BIOCHEMISTRY - PAPER – I (RS3)
Q.P. CODE: 8037

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Write an account of renal function tests, add a note on renal replacement therapy.
2. Write the chemistry, synthesis of haemoglobin and laboratory diagnosis of Haemoglobinopathy.
3. Write briefly on newborn screening.
4. Explain the biliary tract diseases. Add a note on lab analysis of gall stones.
5. Write the biochemistry and tissue distribution of cardiac markers. Write a note on clinical utility of cardiac markers in diagnosis.
6. Write briefly about Total Quality Management.
7. Write the classification, applications and characteristics of POCT analyzer. Give examples.
8. Describe the separation of plasma proteins of Electrophoresis method.
9. Discuss about Drug of abuse.
10. Explain in detail about role of laboratory information system in clinical laboratory.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 12-Jan-2022

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

BIOCHEMISTRY - PAPER – II (RS3)
Q.P. CODE: 8038

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Explain about self monitoring of blood glucose. Add a note on determination and significance of Glycated Hemoglobin.
2. Separation of lipoproteins by electrophoresis.
3. Explain factors affecting enzyme activity and write a note on immobilized enzymes.
4. Explain nephelometry and turbidimetry.
5. Sources, functions and metabolism of Iron.
6. Metabolism of Cholesterol. Add a note on its degradation products.
7. Describe urea cycle and add a note on its disorders.
8. Write about the types and structure of DNA.
9. Clinical significance of Free radicals and antioxidants.
10. Write the sources, RDA, Biochemical functions of Deficiency manifestations of Vitamin C

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 10-Jan-2022

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

HAEMATOLOGY and BLOOD TRANSFUSION - PAPER – I (RS3)

Q.P. CODE: 8042

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Classify qualitative platelet disorder. Add a note on glanzmann thrombasthenia
2. Difference between ALL and AML. Laboratory findings of ALL
3. Write a note on Leukamoid reaction. Explain causes of polycythemia.
4. Hereditary spherocytosis
5. Write a note and clinical presentation on G6PD deficiency
6. Absorption, laboratory diagnosis of Iron deficiency Anemia
7. Define, etiology, pathogenesis, laboratory diagnosis of aplastic anemia
8. Define, etiopathogenesis, clinical findings of pernicious anemia
9. Mention the causes of agranulocytosis and lymphocytosis
10. Test for fibrinolytic activity

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 12-Jan-2022

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

HAEMATOLOGY and BLOOD TRANSFUSION - PAPER – II (RS3)
Q.P. CODE: 8043

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Discuss on Hemolytic disease of the new born, Add a note on exchange transfusion
2. Stem cell processing, storage and transplantation
3. Define and write briefly on apheresis
4. Tissue banking
5. Technical advances and future trends in blood banking
6. Drug control regulation in blood bank
7. Autoimmune hemolytic anemia
8. Record keeping and documentation in blood bank
9. Cross match and its application
10. Explain immunomodulation. Investigation on graft versus host disease

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 10-Jan-2022

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

MICROBIOLOGY – PAPER – I (RS3)
Q.P. CODE: 8047

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Explain in detail automation in microbiology laboratory.
2. Define and classify agglutination. Explain mechanism and application of agglutination.
3. Describe pathogenicity and laboratory diagnosis of syphilis.
4. Explain in detail laboratory diagnosis of bacillary dysentery,
5. Define immune response. Explain in detail mechanism of cell mediated immune response.
6. Classify Streptococcus species. Explain in detail pathogenesis and laboratory diagnosis of streptococcus pyogenes.
7. Define autoimmunity. Explain in detail mechanism of autoimmunity.
8. Explain in detail pathogenesis and laboratory diagnosis of enteric fever.
9. Antimicrobial susceptibility testing by Kirby Bauer method.
10. Enumerate the organism causing Zoonosis. Explain pathogenesis and laboratory diagnosis of Brucellosis.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 12-Jan-2022

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

MICROBIOLOGY – PAPER– II (RS3)
Q.P. CODE: 8048

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Write in detail about the structure, pathogenesis and laboratory diagnosis of Herpes Simplex Virus.

2. Enumerate the organism causing opportunistic fungal infection. Explain the morphology, pathogenesis and laboratory diagnosis of Aspergillosis.

3. Classify cestodes. Discuss the life cycle, pathogenesis and laboratory diagnosis of Echinococcus granulosus.

4. Write in detail about the morphology, pathogenesis and laboratory diagnosis of Influenza. Add a note on its antigenic variations.

5. Enumerate the organism causing subcutaneous infection. Explain in detail about Mycetoma.

6. Describe the morphology, pathogenesis, laboratory diagnosis of Rabies Virus. Add a note on immunoprophylaxis against Rabies.

7. Enumerate the causative agents of haemorrhagic fever. Explain the pathogenesis, laboratory diagnosis and prophylaxis of Dengue virus.

8. Give a brief account of morphology, life cycle, pathogenesis and laboratory diagnosis of Taenia saginata.

9. Explain the morphology, antigenic structure, pathogenesis, laboratory diagnosis and prophylaxis of Hepatitis B.

10. Explain in detail about life cycle, pathogenesis and laboratory diagnosis of Rhinosporidiosis.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 10-Jan-2022

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

BIOCHEMISTRY – II
Paper - I (RS-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]

Answer All The Questions **10 X 10 = 100 Marks**

1. Discuss about the classification, application and evaluation of tumor markers.
2. Renal calculi and laboratory analysis
3. Explain the composition, collection and biochemical analysis of CSF.
4. Liver specific enzymes and Non-Enzyme analytes in Liver Function Assessment.
5. Write about clinical utility of Cardiac marker. Add a note on Cardiac troponins and Myoglobin.

Section B – Laboratory Management [50 marks]

6. Discuss Total Quality management in clinical biochemistry laboratory.
7. Inborn errors of metabolism.
8. Drugs of abuse.
9. Laboratory Information System.
10. Describe about Pre-analytical and analytical variables in Total Quality management.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 12-Jan-2022

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

BIOCHEMISTRY – II
Paper – II (RS-2)
Q.P. CODE: 9815

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Explain the metabolism of glucose by Glycolysis. Discuss the clinical manifestations, diagnosis and treatment for Diabetes Mellitus.

2. Describe the catabolism of phenylalanine. Explain the biochemical abnormalities, clinical manifestations, laboratory diagnosis and treatment of Phenylketonuria.

3. Explain the metabolism of lipoprotein. Add a note on its disorders.

4. Gout –definition classification, clinical manifestations, diagnosis and treatment.

5. Discuss the role of enzymes as analytical reagents in diagnostic field giving suitable examples. Add a note on applications of immobilized enzymes.

6. Describe the generation of free radicals. Add a note on various free radical scavenger systems available in the body.

7. Describe urea cycle and explain the disorders associated with it.

8. Write about function, deficiency and absorption of Iron.

9. Describe the principle and applications of Photometry and Luminometry. Explain the instrumentation.

10. Separation of serum protein electrophoresis by slide agarose gel electrophoresis.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 10-Jan-2022

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

HAEMATOLOGY AND BLOOD TRANSFUSION – II
Paper – I (RS-2)
Q.P. CODE: 9818

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Write the classification of hemorrhagic disorder. Discuss detail about acquired hemorrhagic vascular disorders.
2. Discuss in detail about etiology, pathophysiology and diagnosis of Von Willebrand disease.
3. Platelet function test and platelet count.
4. Discuss origin, development, structure and function of Platelets.
5. Discuss disseminated intravascular coagulation in detail.
6. Pathophysiology and lab diagnosis of Haemophilia.
7. Write in detail about Thrombocytopenia.
8. Write the classification, clinical features, lab diagnosis and bone marrow findings in ITP.
9. Automation and Quality control in Haematology.
10. Definition, clinical features and laboratory investigations of Antiphospholipid antibody syndrome.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 12-Jan-2022

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

HAEMATOLOGY AND BLOOD TRANSFUSION – II

Paper – II (RS-2)

Q.P. CODE: 9819

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. What are different blood group systems? Write a note on importance of Rh system.
2. Discuss blood donation, donor registration, donor selection and blood collection.
3. What is cross matching? Discuss the steps to perform cross matching.
4. Discuss autologous transfusion. Add a note on cord blood banking.
5. Discuss quality assurance in blood banking. Add a note on paternity testing.
6. What is Apheresis? Discuss storage of blood components.
7. Discuss anticoagulant used in Blood bank.
8. Graft versus host reaction.
9. History of transfusion medicine.
10. Name the transfusion transmitted diseases. Explain the screening of blood for infective material.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 19-Dec-2022

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

BIOCHEMISTRY - PAPER – I (RS3)
Q.P. CODE: 8037

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Explain the laboratory assessment of Biliary tract disease.
2. Describe new born screening.
3. Write in detail about composition, collection and biochemical analysis of CSF.
4. **Discuss renal function tests. Add a note on renal handling of electrolytes**.
5. Clinical utility of cardiac **markers** and write a note on cardiac troponin.
6. Point of care testing.
7. Explain the diagnosis of inborn errors of metabolism by qualitative and **quantitative** TESTS
8. Write the definition and types of electrophoresis and explain **agarose** gel electrophoresis in detail
9. Quality assurance program.
10. Drugs of abuse.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 21-Dec-2022

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

BIOCHEMISTRY - PAPER – II (RS3)
Q.P. CODE: 8038

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Isoenzymes and their clinical significance.
2. Write about the oxidative pathway of Glucose metabolism and add a note on its significance.
3. Explain the separation of amino acids by chromatography.
4. Discuss Gestational Diabetes Mellitus and add a note on screening of GDM.
5. Explain in born errors of amino acid metabolism and add a note on its laboratory diagnosis.
6. Describe biochemistry of cancer.
7. Explain about the Nucleic acid metabolism and also mention about its disorders.
8. Discuss in detail about Amperometry and Voltametry.
9. Write about RDA, source, function, deficiency of Niacin.
10. Describe about the function of sodium. Add a note on its clinical importance.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 19-Dec-2022

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

HAEMATOLOGY and BLOOD TRANSFUSION - PAPER – I (RS3)
Q.P. CODE: 8042

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Define and classify hemolytic anemias. Write on laboratory diagnosis of hemolytic anemias.
2. Define and classify anemias. Explain lab diagnosis of Macrocytic anemia.
3. Antiphospholipid syndrome.
4. Classify platelet disorder. Explain laboratory investigations done for thrombocytopenia patients.
5. Anticoagulants used in haematology.
6. Describe erythropoiesis. Add note on erythropoietin.
7. Explain von Willibrand disease.
8. Normal hemostasis. Add a note on fibrinolytic system.
9. Mechanism and laboratory diagnosis of DIC.
10. Define Acute lymphoid leukaemia. Laboratory diagnosis of Acute myeloid Leukaemias.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 21-Dec-2022

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

HAEMATOLOGY and BLOOD TRANSFUSION - PAPER – II (RS3)
Q.P. CODE: 8043

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. History of blood transfusion medicine
2. Cord blood banking
3. Indirect coombs test and its application
4. Blood bank organisation
5. Preparation, clinical significance, storage of FFP and platelet
6. Compatibility testing
7. Medico legal aspects of blood banking
8. Biomedical waste management in blood bank
9. ABO and Rh blood group system
10. Anticoagulants used in blood bank

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 19-Dec-2022

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

MICROBIOLOGY – PAPER – I (RS3)
Q.P. CODE: 8047

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Define and classify antigen-antibody reactions. Write in detail about Agglutination.
2. With a neat-labelled diagram, describe MHC. Add a note on HLA typing.
3. Write in detail about diffusion methods of antibiotic sensitivity testing.
4. Enumerate the aetiological agents of UTI. Write in detail about pathogenesis and laboratory diagnosis of E.coli.
5. Enumerate the organisms causing Enteric fever. Explain in detail pathogenesis and laboratory diagnosis of S.typhi.
6. Define and classify Hypersensitivity. Briefly explain type IV Hypersensitivity.
7. Define and classify Immunity. Explain in detail about acquired immunity. Add a note on prophylactic immunizations.
8. Write in detail about aetiological agent, pathogenesis, laboratory diagnosis and prophylaxis of Tetanus.
9. Define complement system. Write in detail about alternate pathway and its components.
10. Enumerate the organisms causing zoonoses. Write in detail about Anthrax.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 21-Dec-2022

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

MICROBIOLOGY – PAPER– II (RS3)
Q.P. CODE: 8048

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

Answer All The Questions **10 X 10 = 100 Marks**

1. Recent advances in diagnosis of viral infections
2. Pathogenesis ad laboratory diagnosis of dermatophytosis
3. Antigenic variation in influenza virus
4. Life cycle and laboratory diagnosis of Lymphatic Filariasis
5. Pathogenicity of herpes simplex virus
6. Pathogenesis and laboratory diagnosis of sporotrichosis
7. Stool examination for ova and cyst
8. Life cycle and laboratory diagnosis of toxoplasmosis
9. Morphology and pathogenicity of Rabies virus
10. Life cycle of plasmodium falciparum

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 19-Dec-2022

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

BIOCHEMISTRY – II
Paper - I (RS-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]

Answer All The Questions **10 X 10 = 100 Marks**

1. List out the tests performed under liver function. Explain the assessment of enzyme and non-enzyme analytes.

2. Discuss in detail about measurement of serum osmolality by osmometry.

3. Explain the components of gall stone and add a note on its qualitative analysis.

4. Discuss the characteristics and significance of cardiac biomarkers. Explain the analytical measurement of cardiac Troponin I.

5. Discuss the purpose and criteria of new-born screening. Describe the procedure for specimen collection by heal prick method. Enumerate

Section B – Laboratory Management [50 marks]

6. Discuss the role of laboratory personnel in patient management.

7. Write in detail about working of different types of clinical laboratory.

8. Describe the characteristics of point of care testing (POCT) devices. Discuss ABG analyser as a POCT device.

9. Define external quality assessment (EQA). Discuss the objective and typical events of an EQA scheme.

10. Discuss the absorption, distribution, biotransformation and excretion of drugs. Add a note on clinical utility of any one important therapeutic drug ans its management.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 21-Dec-2022

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

BIOCHEMISTRY – II
Paper – II (RS-2)
Q.P. CODE: 9815

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Give the dietary sources and RDA for Iron. Explain its biochemical functions. Add a note on the clinical manifestations and treatment of iron deficiency anaemia.

2. Describe the regulation of blood glucose. Discuss the pathogenesis and diagnostic criteria of Type II Diabetes Mellitus. Add a note on biochemical analytes used in the long-term monitoring of Diabetes Mellitus.

3. Discuss the biochemical abnormalities, clinical manifestations, laboratory diagnosis and treatment of Phenylketonuria.

4. Describe the metabolism of ketone bodies. Discuss the causes, salient features and laboratory diagnosis of ketosis.

5. Give a detailed account of types and structure of DNA.

6. What are isoenzymes? Explain their characteristics, laboratory evaluation and diagnostic significance.

7. Discuss the role of antioxidants. Comment on various free radical scavenger systems available in the body.

8. Write about the RDA, function and deficiency of vitamin A. Add a note on Wald's visual cycle.

9. Describe the principle and applications of Turbidimetry and Nephalometry. Explain the instrumentation.

10. Separation of plasm protein electrophoresis by slide agarose gel electrophoresis

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 28-Dec-2022

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

HAEMATOLOGY AND BLOOD TRANSFUSION – II

Paper – I (RS-2)

Q.P. CODE: 9818

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Von willebrand's disease.
2. Discuss idiopathic thrombocytopenic purpura.
3. Hemophilia A and Hemophilia B.
4. Thrombocytosis – pathogenesis causes and lab diagnosis.
5. Investigations for hemorrhagic disorders.
6. Disseminated intravascular coagulation – etiopathogenesis and laboratory investigations.
7. Antiphospholipid syndrome.
8. Automation and quality control and hematology.
9. Flow cytometry – principle and indications.
10. Define normal hemostasis. Differentiate between primary and secondary hemostasis.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 30-Dec-2022

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

HAEMATOLOGY AND BLOOD TRANSFUSION – II

Paper – II (RS-2)

Q.P. CODE: 9819

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. What is Autologous transfusion? Explain the types, advantages and disadvantages of Autologous transfusion.

2. What are types of Autoimmune hemolytic anemia? Add a note on laboratory diagnosis and transfusion challenges in Autoimmune hemolytic anemia.

3. What is hemapheresis? Describe the donor screening and procedure for Platelet apheresis.

4. Discuss the importance, challenges in organization and conduct of a voluntary blood donation camp

5. Quality control of Reagents in Blood Banks.

6. What is Compatibility testing? Write the procedure, methods of Cross matching of blood components for transfusion.

7. Discuss the Biomedical Waste Management in Blood Banks.

8. List the Donor Screening and deferral criteria.

9. Describe the pathogenesis of Hemolytic Disease of newborn. Add a note on the management.

10. List the blood Components prepared in a Blood Bank. Discuss their storage, shelf life and QC.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 13-Jul-2022

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

BIOCHEMISTRY - PAPER – I (RS3)
Q.P. CODE: 8037

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Write a note on absorption, distribution, biotransformation and excretion of drugs.
2. Qualitative and quantitative tests in diagnosis of in born errors of metabolism.
3. Write briefly about chromatography.
4. Write a note on role of lab personnel in patient management.
5. Write briefly on automation in clinical laboratory.
6. Describe in detail about indication, specimen collection and clinical analysis for meningitis.
7. Write the classification of tumor markers. Add a note on laboratory evaluation of any five tumor markers.
8. Write about synthesis of porphyrins. Add a note on laboratory diagnosis of porphyrias.
9. Write the clinical manifestations of gastric and intestinal diseases.
10. Enumerate the assessment of Liver function of different laboratory analytics.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 15-Jul-2022

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

BIOCHEMISTRY - PAPER – II (RS3)
Q.P. CODE: 8038

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Metabolism of glycogen. Add a note on Glycogen storage disorder.
2. Write about Hexose Monophosphate shunt. Mention about its significance.
3. Write the sources, RDA, Biochemical functions of deficiency manifestations of Vitamin D
4. Explain about Lipoprotein metabolism. Add a note on its inherited disorders.
5. Describe the structure of DNA and RNA with neat diagrams.
6. Write about the structure and types of RNA.
7. Explain the metabolism of calcium and add a note on its hormonal regulation.
8. Describe in detail about diagnostic importance of enzyme in analysis of various disorders.
9. Discuss in detail about **Fluorometry** and Luminometry.
10. Explain formation of Uric acid in detail.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 13-Jul-2022

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

HAEMATOLOGY and BLOOD TRANSFUSION - PAPER – I (RS3)
Q.P. CODE: 8042

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Classify acute Leukemia. Discuss cytochemical staining for acute myeloblastic Leukemia.
2. Quality control in Haematology laboratory.
3. Classify thalassemia. Describe etiology, clinical features and investigation of Beta thalassemia.
4. Classify haemolytic anemia. Write briefly on autoimmune hemolytic anemia.
5. Discuss in detail the methods and interpretation of Hb electrophoresis.
6. Haemoglobin estimation methods, procedure and clinical significance.
7. Myelodysplastic syndrome.
8. Classify platelet disorders. Discuss in detail functional platelet disorders.
9. Disseminated intravascular coagulation.
10. Prothrombin time and international normalized ratio.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 15-Jul-2022

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

HAEMATOLOGY and BLOOD TRANSFUSION - PAPER – II (RS3)
Q.P. CODE: 8043

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Name the blood components. Explain on fresh frozen plasma and platelet component preparation
2. Anticoagulants used in blood bank.
3. Methods of bleeding donors
4. ABO and Rh blood group system
5. Explain on transfusion transmitted diseases with the laboratory tests
6. Du testing – detailed procedure and its significance.
7. Direct antiglobulin test
8. Explain medico legal aspects of blood transfusion
9. Major and Minor cross matching
10. Discuss non hemolytic transfusion reaction and investigation on transfusion reaction

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 13-Jul-2022

Time: 3 Hours **Max. Marks: 100**

MICROBIOLOGY – PAPER – I (RS-3)
Q.P. CODE: 8047

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

Answer All The Questions **10 X 10 = 100 Marks**

1. Define and classify hypersensitivity. Explain in detail about anaphylaxis
2. Classify Salmonella. Explain the pathogenicity and laboratory diagnosis of typhoid fever
3. HLA complex – structure and application of HLA typing
4. Collection, transport and processing of specimens in UTI
5. Pathogenicity and laboratory diagnosis of syphilis
6. Types and application of ELISA
7. Laboratory diagnosis and prophylaxis of tetanus
8. Kirby Bauer method – Principle, procedure, interpretation
9. Explain pathogenicity and laboratory diagnosis of anthrax
10. Sample collection and laboratory diagnosis of gonorrhoea

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 15-Jul-2022

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

MICROBIOLOGY – PAPER– II (RS3)
Q.P. CODE: 8048

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

Answer All The Questions **10 X 10 = 100 Marks**

1. Pathogenicity and laboratory diagnosis of Cryptococcosis
2. Laboratory diagnosis of Kala-azar
3. Morphology of Hydatid cyst. Add a note on its pathogenicity
4. Serological markers of hepatitis B virus
5. Morphology and life cycle of Giardia lamblia
6. Laboratory diagnosis and prophylaxis of poliovirus
7. Life cycle and laboratory diagnosis of hookworm
8. Pathogenesis and laboratory diagnosis of chromoblastomycosis
9. Morphology and pathogenicity of HIV
10. Pathogenicity and laboratory diagnosis of cytomegalovirus

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 13-Jul-2022

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

BIOCHEMISTRY – II
Paper - I (RS-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]

Answer All The Questions **10 X 10 = 100 Marks**

1. Discuss the role of GIT hormones and enzymes in evaluation of malabsorption.

2. What are the indications for biochemical analysis of CSF? Explain the sample collection, principle and procedure for the estimation of glucose, protein and chloride in CSF.

3. Describe the functions of Thyroid Hormone. Discuss the specimen collection, transport, analysis and clinical significance of this hormone.

4. State the ideal characteristics of cardiac marker. Discuss the indications for testing cardiac biomarkers and explain the analytical measurement of CK-MB.

5. Describe the salient features of porphyria. Explain the clinical features and laboratory diagnosis of Myoglobinuria.

Section B – Laboratory Management [50 marks]

6. Describe the characteristics of point of care testing (POCT) devices. Discuss Glucometer analyser as a POCT device.

7. Define soft skills. Explain different types of patient management skills to be followed in a laboratory.

8. Discuss different types of automation. Comment on the benefits of automation.

9. Discuss Internal quality control (IQC) material in detail.

10. Explain the mechanism of action of drug.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 15-Jul-2022

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

BIOCHEMISTRY – II
Paper – II (RS-2)
Q.P. CODE: 9815

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Give an account of metabolism of sulphur containing amino acids. Add a note on the inborn errors associated with it.
2. Explain the metabolism of lipoproteins in detail. Write a note on lipid storage diseases.
3. Diagnosis of inborn errors of carbohydrate metabolism by qualitative and chromatographic techniques.
4. Biochemistry of cancer.
5. Analytical applications of immobilized enzymes.
6. HMP Shunt pathway.
7. Plasma proteins.
8. Biosynthesis of pyrimidine nucleotides and its associated disorders.
9. Write the sources, RDA, Functions and disorders of Iron. Add a note on Absorption of Iron.
10. Write the principle and application of Turbidimetry and Nephalometry.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 13-Jul-2022

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

MICROBIOLOGY – II
Systematic Bacteriology, Applied Microbiology and Immunology
PAPER-I (RS-2)
Q.P. CODE: 9816

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Syphilis – Describe the causative agent and discuss laboratory diagnosis.
2. Bacterial Meningitis – list the agents and discuss the laboratory diagnosis.
3. List the agents causing CR-BSI. Discuss the laboratory diagnosis of the same.
4. List the bacterial pathogens causing diarrhoea and dysentery. Describe the process of their identification by stool culture.
5. List the various methods for antimicrobial susceptibility testing. Discuss E-test.
6. Define and classify hypersensitivity reactions. Describe Type 4 reaction.
7. Monoclonal antibodies – techniques and applications.
8. ELISA – Principle, types, clinical applications.
9. Complement – definition, pathways and deficiency diseases.
10. Immunofluorescence – Principle, types and clinical applications.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 15-Jul-2022

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

MICROBIOLOGY – II
Virology, Mycology and Parasitology
PAPER-II (RS-2)

Q.P. CODE: 9817

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Describe the laboratory diagnosis of HIV.
2. Discuss the life cycle, pathogenesis and laboratory diagnosis of Entameoba histolytica.
3. Life cycle of Giardia lamblia.
4. Laboratory diagnosis of Bancroftian filariasis.
5. Dengue Virus.
6. Immunoprophylaxis of Rabies.
7. Enumerate the dimorphic fungi. Discuss Histoplasmosis in detail.
8. Laboratory diagnosis of Dermatophytosis.
9. Clinical manifestations of Falciparum Malaria. Add a note on its complications.
10. Varicella – Zoster virus pathogenicity and clinical features.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 13-Jul-2022

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

HAEMATOLOGY AND BLOOD TRANSFUSION – II
Paper – I (RS-2)
Q.P. CODE: 9818

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. Describe the principle, procedure of APTT. Add a note on the further laboratory testing done for prolonged APTT.

2. What are platelet functional disorders? Discuss approach to diagnosis with Platelet function tests.

3. Draw a representative chart explaining the coagulation cascade.

4. Describe the clinical features, types pathogenesis and lab diagnosis of Immune Thrombocytopenia (ITP).

5. Discuss the clinical features, pathogenesis and lab diagnosis of Antiphospholipid antibody syndrome.

6. Enumerate the causes of Die and explain the pathogenesis and lab diagnosis.

7. Discuss the Biomedical Waste Management in Clinical laboratories.

8. Explain the principle and applications of Flowcytometry in hematology.

9. Explain the principle of detection of platelet count on the hematology analyzers. List the causes of falsely low platelet counts and how they can be corrected.

10. Discuss Quality control methods in automated Hematology analyzers.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year M.Sc. (MLT) Degree Examination - 15-Jul-2022

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

HAEMATOLOGY AND BLOOD TRANSFUSION – II

Paper – II (RS-2)

Q.P. CODE: 9819

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

Answer All The Questions **10 X 10 = 100 Marks**

1. What are Adverse Donor reactions? Add a note of the management of such reactions
2. What are transfusion transmitted infections? Discuss the methods for testing the mandatory transfusion transmitted infections.
3. Discuss the Biomedical Waste Management in Blood Banks.
4. Quality control of Blood components in Blood Banks.
5. Discuss the principle, indications, procedure and interpretation of Indirect Coombs test.
6. Describe the donor screening and procedure for Platelet apheresis. What are the advantages of Apheresis platelet units?
7. Discuss the methods of Blood Grouping. List the advantages and disadvantages of each method.
8. List the various types of adverse transfusion reactions. Add a note on the transfusion reaction workup done for these cases.
9. Explain the orientation and sections in a blood bank with component preparation.
10. What is Du (Weak D)? Add a note on detection of Du and its significance.