Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

BIOCHEMISTRY – II (RS-2)

Q.P. CODE: 1231

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. How is glycogen metabolized in the body?
2. Write in detail about examination of abnormal constituents of urine
3. Write in detail about the metabolic changes happening in the body during starvation

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. What is the importance of fibres in nutrition?
5. What is β-oxidation?
6. Write a note on balanced diet.
7. How is uric acid produced in the body? Mention its significance.
8. Write a not on atherosclerosis
9. Mention the role of vitamin K
10. Write the principle, instrumentation and applications of flame photometry
11. Wald's visual cycle

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Write a note on lipotropic factors
13. Write a note on K_m and V_{MAX}
14. What are the functions of proteins?
15. What is viscosity?
16. What are the different hyperglycaemic hormones present in humans?
17. What is the role of Ig G in immunity?
18. What are essential fatty acids?
19. What are the functions of vitamin B_{12}
20. Give the normal values of Fasting, postprandial and random blood sugar levels.
21. Write a note on prostaglandins
22. How are drugs estimated?
23. Jaffe's test

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – II (RS-2)

Q.P. CODE: 1232

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Write in detail on agent and diagnosis of Sporotrichosis. List 2 other agents of subcutaneous mycosis.
2. Name other agents of malaria. Describe life cycle and laboratory diagnosis of falciparum malaria.
3. Classify viruses with 2 examples for each group. Describe various methods of cultivation of viruses.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Dermatophytes
5. E.Histolytica – laboratory diagnosis
6. Post exposure prophylaxis of rabies.
7. Chikungunya
8. C. Neoformans
9. Stool examination for parasitic infections.
10. W Bancrofti
11. H Capsulatum

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Needle stick injury- prevention and prophylaxis.
13. Pulse polio programme
14. KOH examination
15. Dracunculiasis
16. Name 3 species of Aspergillus. Draw a diagram of any one and label.
17. Saboraud Dextrose agar
18. LD bodies
19. Eggs of Ascaris and Hookworm
20. Tease mount technique
21. Echinococcosis-Name the causative agent, definitive and intermediate host in its life cycle
22. Rota virus
23. Influenza virus

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

PATHOLOGY – II (RS - 2)

Q.P. CODE: 1233

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. What is Hematocrit? Describe the various methods of measuring it.
2. Different types of microscopes and their applications.
3. Write about different Haematoxylin stain and steps in staining procedure of any one.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Decalcification.
5. Eosinophils and test for eosinophils.
6. Knife sharpening.
7. Write about indexing and record keeping in laboratory.
8. Morphology and functions of Neutrophils.
9. Reticulocyte count
10. Determination of HbF and HbA2
11. Freezing microtome and crystat

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. What is mordant? Give an example.
13. What is regressive staining?
14. Name different types of cells seen in normal bone marrow.
15 Leukhart's "L" block.
16. Types of strop
17. Heinz bodies
18. Assay of clotting factors.
19. How do you prepare slides for electron microscope?
20. Plasma Haptoglobin
21. Differential count of WBC
22. Supravital stains.
23. Name stains used for cytochemistry.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

PATHOLOGY – II (Revised Scheme)

Q.P. CODE: 1606

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe the procedure of section cutting of a paraffin block. What are the difficulties encountered during section cutting?
2. Define erythrocyte sedimentation rate. Describe the technique of estimating ESR by Westergren method.
3. Write an essay on automation in histopathology. Add a note on automatic slide stainer.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Test for Bence-Jones proteins
5. List the investigations done in a bleeding disorder.
6. Reticulocyte count
7. May-Grunwald Giemsa stain
8. Osmotic fragility test
9. Principles of electron microscopy
10. Write the sites of bone marrow aspiration. List the cells seen in normal bone marrow smear.
11. Schilling test
12. Coomb's test
13. Red cell indices

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Morphology of LE cell
15 Stropping
16. Enumerate methods of haemoglobin estimation
17. Name special stains for fat.
18. Decalcifying agents
19. Morphology of basophil
20. Supra vital stain
21. Leuckhart's 'L' blocks
22. Heinz bodies
23. Normal serum vitamin B12 and folate values

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – II (Revised Scheme)

Q.P. CODE: 1607

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Classify Mycobacteria. Describe in detail laboratory diagnosis of pulmonary tuberculosis.
2. Name the causative agents of malaria. Describe life cycle and laboratory diagnosis of P. falciparum malaria.
3. Describe virulence mechanisms, diseases caused and laboratory diagnosis of Staphylococcus aureus.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Albert's stain
5. E. histolytica – laboratory diagnosis
6. Laboratory diagnosis of cholera
7. Blood culture
8. T. saginata
9. Stool examination for parasitic infections
10. W. bancrofti
11. Transport media
12. CAMP test
13. List 5 bacteria causing U.T.I and add a note on laboratory diagnosis of U.T.I.

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Tetanus prophylaxis
15 Widal test
16. Name any two non-specific test for Syphilis
17. Dracunculasis
18. Blood agar and its uses
19. Differences between S. pneumoniae and S. viridans – any two
20. LD bodies
21. Draw neat labelled diagrams of Eggs of Ascaris.
22. Elek's gel precipitation test
23. Echinococcosis – name the causative agent, definitive and intermediate host in its life cycle.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – September 2014

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – II (Revised Scheme)

Q.P. CODE: 1607

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe in detail laboratory diagnosis and prophylaxis of C. diphtheriae.
2. Amoebic dysentery – describe causative agent, life cycle and laboratory diagnosis.
3. Describe the morphology, clinical features and laboratory diagnosis of S. pneumoniae.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Coagulase test
5. Plasmodium vivax
6. Hook worm – life cycle and diagnosis
7. T. vaginalis – life cycle, clinical features and diagnosis
8. Brugia malayi
9. Cysticercosis
10. Concentration of Sputum specimen
11. Hook worm – life cycle and laboratory diagnosis
12. Laboratory diagnosis of Enteric Fever
13. Prophylaxis for Tetanus

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Name the sub groups of Shigella.
15 NIH swab
16. Sabin Feldman Dye test
17. VDRL test
18. BCG vaccine
19. Nagler's reaction
20. Giardia – trophozoite & cyst
21. N. meningitidis
22. Thayer Martin medium
23. Satellitism

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – September 2014

Time: Three Hours **Max. Marks: 80 Marks**

Biochemistry – II (RS)

Q.P. Code : 1608

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Write the sources, RDA, biochemical functions and deficiency manifestations of vitamin A.
2. Enumerate the reactions of TCA cycle. Add a note on its energetics.
3. Explain the principle of spectrophotometers. Add a note on parts of spectrophotometer and mention its significance

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Secondary structure of proteins.
5. Iso enzymes and their diagnostic significance.
6. Procedure of Oral glucose tolerance test.
7. Preparation of protein free filtrate.
8. Formation of uricacid.
9. Paper chromatography.
10. Describe the blood sample collection. Add a note on anticoagulants.
11. What is normal blood urea level? Write the reactions of urea cycle.
12. Explain the principle of electrophoresis. Draw the electrophoresis pattern of normal serum.
13. Non-competitive enzyme inhibition.

SHORT ANSWERS **10 x 2 = 20 Marks**

14. What are coenzymes? Give two examples.
15 Denaturation.
16. Epimers.
17. Benedict's test.
18. Pellagra.
19. Km value.
20. Name any four urine preservatives.
21. Mention the normal level of serum Creatinine and serum total cholesterol.
22. Marker enzymes of myocardial infarction.
23. What are simple proteins? Give example.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

Biochemistry – II (RS)

Q.P. Code : 1608

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define the principle of electrophoresis and discuss the procedure of serum protein electrophoresis.
2. Define Gluconeogenesis. Outline the pathway starting from lactate and mention the key enzymes.
3. Write the sources, RDA, biochemical functions and deficiency manifestations of Vitamin A.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Principle and uses of Spectrophotometry.
5. Energetic of aerobic glycolysis.
6. Effect of substrate concentration on enzyme activity.
7. Functions and deficiency symptoms of Vitamin C.
8. a) Lactose intolerance b) Von-Gierke's disease.
9. Biologically important peptides.
10. Gout.
11. Significance of HMP shunt pathway.
12. Competitive inhibition.
13. Glycosuria.

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Beri-Beri.
15. Give the normal levels of a) Cholesterol b) Uric acid c) alkaline phosphatase d) Lactate dehydrogenase.
16. Write four functions of Mucopolysaccharides.
17. Normal blood urea level and its importance.
18. Antioxidants.
19. Inhibitors of glycolysis.
20. Biochemical role of Vitamin K
21. Name the two major hormones which regulates blood sugar level.
22. What is glycosidic bond. Indicate the bond in lactose.
23. Define denaturation. Give 2 examples.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – September 2014

Time: Three Hours **Max. Marks: 80 Marks**

BIOCHEMISTRY – II

Q.P. CODE: 3156

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe the sources, RDA, absorption and deficiency manifestations of Vitamin B_{12}.
2. What is glucose tolerance test? Give a detailed account of the instructions to be given to the patient and specimen collection at the laboratory while carrying out Oral Glucose tolerance test (OGTT) with 75 g glucose load. Discuss the laboratory analysis and interpretation of results.
3. Explain the operation of urea cycle. Discuss the biochemical defect and features of any two disorders of urea cycle. Urea and urea nitrogen differ in molecular weight-justify and give the conversion factor.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Explain the procedure for sample collection by heel puncture. Explain the precautionary measures to be taken.
5. Anaerobic glycolysis.
6. Explain the Photometric Accuracy check with a suitable example.
7. Describe the synthesis of creatine and cretinine. Give the clinical significance of creatinine.
8. Explain the Structure and functions of t-RNA.
9. Glycated HbAlc-Formationn, biological reference intervals and clinical significance.
10. Discuss the biochemical abnormality and clinical features of
    a) Phenyl ketonuria b) Alkaptonuria.
11. Principle of reflectance spectrophotometry and nephelometry.

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Tyrosine is both ketogenic and glucogenic –Justify.
13. Discuss the therapeutic role of enzymes.
14. Explain the principle of freezing point depression osmometer. Add a note on its applications.
15. Describe various anticoagulants used in blood sample collection.
16. Give the biomedical importance of amino sugars and glycosides.
17. Laboratory water and NCCLS specifications.
18. Differentiate between coenzymes and isoenzymes.
19. Give the procedure for qualitative estimation of abnormal constituents of urine-protein and blood.
20. What is linearity of a test method? Explain with a suitable example.
21. Instructions to collect 24 hrs urinary sample for VMA estimation.
22. What are polysaccharides? Classify with examples. Write a note on mucopolysaccharides.
23. Give the normal composition of CSF. Mention two disease conditions with variations in CSF glucose and protein values.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (M.L.T) Degree Examination – September 2014

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – II (RS3)

Q.P. CODE: 3157

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Enumerate the organisms causing gas gangrene. Describe the morphology, cultivation, Pathogenicity, laboratory diagnosis of Clostridium perfringens.
2. Discuss the pathogenicity and laboratory diagnosis of Mycobacterium tuberculosis.
3. Discuss the general characteristics of Cestodes. Describe the morphology, life cycle, clinical manifestations and laboratory diagnosis of Taenia solium.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Methicillin resistant Staphylococcus aureus.
5. Laboratory diagnosis of anthrax.
6. Laboratory diagnosis of Meningococcal meningitis.
7. Widal test.
8. Life cycle and the pathogenicity of Leishmania donovani.
9. Laboratory diagnosis of malaria.
10. Pathogenicity and clinical manifestations of Schistosoma haematobium.
11. Life cycle of Ancylostoma duodenale.

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Post streptococcal complications.
13. Name three bacterial zoonotic diseases.
14. String test for Vibro cholerae.
15. Enumerate the manifestations of Haemophilus influenzae.
16. Rapid urease test.
17. FTA-ABS test.
18. Define intermediate host. Give two examples.
19. Describe the morphology of the trophozoite of Entamoeba histolytica.
20. Chagas' Disease-etiology and laboratory diagnosis.
21. Casoni's test.
22. Life cycle of Trichinella spiralis.
23. Laboratory diagnosis of Dracunculiasis.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination - September 2014

Time: Three Hours **Max. Marks: 80 Marks**

Pathology – Paper II (RS-3 Scheme)

Q.P. CODE: 3158

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

LONG ESSAY (Answer any Two) **2 x 10 = 20 Marks**

1. What is ESR? Write the stages of sedimentation. Describe the methods of ESR estimation.
2. What is Haematoxylin? Classify different types of Haematoxylin Stains. List the steps in the staining procedure of any one of them.
3. Describe the steps of tissue processing for Paraffin Embedding.

SHORT ESSAY (Answer any Six) **6 x 5 = 30 Marks**

4. Describe various decalcification methods for bone.
5. Name the Romanowsky stains. How to prepare Leishmann's stain?
6. Quality control in histopathology
7. Application of computers in hematology
8. Automation in hematology laboratory
9. Write the technique of phlebotomy using vacutainers.
10. Lab diagnosis of microcytic anemia
11. Erythropoiesis

SHORT ANWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Levey-Jennings chart
13. Histokinette
14. Mention the uses of periodic acid Schiff stain.
15. Mention six Poikilocytosis of RBC's and their significances.
16. Paraffin Wax
17. Types of microtome knife
18. Morphology of Basophil
19. Write three indications of bone marrow trephine biopsy.
20. Screening tests in bleeding disorders
21. Write the causes of Reticulocytosis.
22. Write three causes of thrombocytopenia.
23. Sickling test

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