Rajiv Gandhi University of Health Sciences, Karnataka

Second Year B.Sc. (M.L.T) Degree Examination – 29-May-2024

Time: Three Hours Max. Marks: 100 Marks

BIOCHEMISTRY – II (RS-4)

Q.P. CODE: 3279

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Name the various types of enzyme inhibitions and explain them with examples.
2. Define the electrophoresis and discuss the procedure of serum protein electrophoresis. Add a note on applications of Electrophoresis.

   OR

   Write the type of weighing balances. Add a note on Electronic balance. Write down the precautionary measures taken while handling the balances.

SHORT ESSAYS (Question No 5 & 10 II Year B.Sc. (MLT) Degree Examination - 21-Nov 2024

Time: Three Hours Max. Marks: 80 Marks

BIOCHEMISTRY – PAPER II (RS3)

Q.P. CODE: 3156

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

LONG ESSAY (Any Two) 2 x 10 = 20 Marks

1. Define enzymes. Explain different types of enzyme inhibition with example.
2. Define Beer-lamberts law. Draw a neat diagram and explain the parts and applications of colorimeter.
3. Explain the regulation of blood glucose level in body. Add a note on glycated HbA1c.

SHORT ESSAY (Any Six) 6 x 5 = 30 Marks

4. What is the difference between normal and molar solution? What is the normality of 1000 ml of 2M Sulfuric acid?
5. Creatinine clearance test.
6. Transamination reaction and its importance.
7. Explain how starch is digested.
8. Functions and deficiency manifestations of Niacin.
9. Principle and applications of chromatography.
10. Secondary structure of proteins.
11. Collection of venous sample for fasting plasma glucose estimation.

SHORT ANWERS (Any Ten) 10 x 3 = 30 Marks

12. Pleural fluid.
13. Write normal levels of Serum Urea, Serum Creatinine and Fasting plasma glucose.
14. What is gout? Enumerate two causes of gout.
15. Name any three Urine preservatives.

16. Name any three normal constituents of urine. Name one test each used to detect them.
17. What are essential amino acids? Give two examples.
18. Preparation of calibration curve.
19. Name the defective enzyme in a) Maple syrup urine disease b) Alkaptonuria c) Phenyl Ketonuria.
20. Functions of Cobalamin.
21. Invert sugar.
22. Difference between DNA and RNA.
23. Principle of Freezing Point Depression of Osmometry.

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SHORT ANSWER 10 x 3 = 30 Marks

13. **Glucometer**
14. Ninhydrin test.
15. Define molarity, valency with one example each.
16. Discuss the therapeutic role of enzymes.
17. Give the normal values of fasting, postprandial and random blood sugar levels.
18. Denaturation of proteins.
19. Urine preservatives.
20. Desiccators and its uses.
21. Define stock and working solutions.
22. Biomedical importance of amino sugars and glycosides.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination - 29-May-2024

Time: Three Hours Max. Marks: 80

BIOCHEMISTRY – PAPER II (RS3)
Q.P. CODE: 3156

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

LONG ESSAY (Any Two) 2 x 10 = 20 Marks

1. Define Coenzymes. Explain the factors affecting enzyme activity
2. Explain urea cycle. Add a note on disorders of urea cycle
3. Explain principle and instrumentation of paper chromatography. Add a note on applications of paper chromatography

SHORT ESSAY (Any Six) 6 x 5 = 30 Marks

4. Oral glucose tolerance test
5. Explain creatinine clearance test
6. Explain the biochemical reactions of tyrosine degradation
7. Explain competitive and non competitive enzyme inhibition
8. Nutritional classification of proteins
9. Mucopolysaccharides – composition and functions
10. Explain digestion of carbohydrates
11. Glycogen storage disorders

SHORT ANWERS (Any Ten) 10 x 3 = 30 Marks

12. Describe the principle of reflectance photometry
13. Analysis of cerebrospinal fluid
14. Biomedical importance of amino sugars
15. Tertiary structure of proteins
16. Define Enzyme specificity. Write any one specificity
17. Glucometers
18. Disorders of uric acid synthesis
19. Energetics of Tricarboxylic acid (TCA) cycle
20. Different forms of DNA
21. Describe the applications of Osmometry
22. Percent solutions
23. Describe the biochemical functions of thiamine

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination - 04-Jun-2024

Time: Three Hours Max. Marks: 80 Marks

Microbiology – II (RS-3)

Q.P. CODE: 3157

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

LONG ESSAY (Any Two) 2 x 10 = 20 Marks

1. Classify the genus streptococci. Explain the virulence factors, pathogenicity and laboratory diagnosis of Streptococcus pyogenes.
2. Name the medically important clostridium. Explain the pathogenicity, laboratory diagnosis and prophylaxis of Clostridium tetani.
3. Name the intestinal Nematodes. Explain the life cycle and laboratory diagnosis of Ascaris lumbricoides.

SHORT ESSAY (Any Six) 6 x 5 = 30 Marks

4. Laboratory diagnosis of Malaria.
5. Hydatid cyst.
6. Morphology and pathogenicity of Entamoeba histolytica.
7. Giardia lamblia.
8. Pyogenic meningitis.
9. Laboratory diagnosis of UTI
10. Non-sporing Anaerobes.
11. Bacillary dysentery.

SHORT ANWERS (Any Ten) 10 x 3 = 30 Marks

12. BCG
13. Malignant pustule.
14. Morphology of Streptococcus Pneumoniae.
15. IMViC test.
16. **Satellitism**
17. RPR
18. Halophilic vibrio
19. MRSA
20. NIH swab
21. DPT
22. Draw a neat diagram of Microfilaria and name the parts.
23. Draw morphological forms of P. falciparum.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination - 21-Nov-2024

Time: Three Hours Max. Marks: 80 Marks

BIOCHEMISTRY – PAPER II (RS3)

Q.P. CODE: 3156

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary.

LONG ESSAY (Any Two) 2 x 10 = 20 Marks

1. Define enzymes. Explain different types of enzyme inhibition with example.
2. Define Beer-lamberts law. Draw a neat diagram and explain the parts and applications of colorimeter.
3. Explain the regulation of blood glucose level in body. Add a note on glycated HbA1c.

SHORT ESSAY (Any Six) 6 x 5 = 30 Marks

4. What is the difference between normal and molar solution? What is the normality of 1000 ml of 2M Sulfuric acid?
5. Creatinine clearance test.
6. Transamination reaction and its importance.
7. Explain how starch is digested.
8. Functions and deficiency manifestations of Niacin.
9. Principle and applications of chromatography.
10. Secondary structure of proteins.
11. Collection of venous sample for fasting plasma glucose estimation.

SHORT ANWERS (Any Ten) 10 x 3 = 30 Marks

12. Pleural fluid.
13. Write normal levels of Serum Urea, Serum Creatinine and Fasting plasma glucose.
14. What is gout? Enumerate two causes of gout.
15. Name any three Urine preservatives.
16. Name any three normal constituents of urine. Name one test each used to detect them.
17. What are essential amino acids? Give two examples.
18. Preparation of calibration curve.
19. Name the defective enzyme in a) Maple syrup urine disease b) Alkaptonuria c) Phenyl Ketonuria.
20. Functions of Cobalamin.
21. Invert sugar.
22. Difference between DNA and RNA.
23. Principle of Freezing Point Depression of Osmometry.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year B.Sc. (M.L.T) Degree Examination – 04-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

MICROBIOLOGY – II (RS-4)

Q.P. CODE: 3280

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Describe the morphology, lifecycle and laboratory diagnosis of Ascaris lumbricoides.
2. Normal Flora of the Human body.
   OR
   Describe the morphology, pathogenicity and laboratory diagnosis of Mycobacterium tuberculosis.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Kirby Bauer disc-diffusion method.
4. Halophilic Vibrio's.
5. DPT vaccine.
   OR
   IMViC test.
6. Laboratory diagnosis of Wuchereria bancrofti.
7. Life cycle of Plasmodium Vivax.
8. WIDAL test.
9. Laboratory diagnosis of Leishmaniasis.
10. Name three sexually transmitted bacteria and add a note on general laboratory diagnosis of sexually transmitted diseases.
    OR
    Life cycle of Ancylostoma duodenale.
11. Methylene Blue Reduction test (MBRT).
12. Name three capsulated bacteria and add a note on Quellung reaction.

SHORT ANSWER 10 x 3 = 30 Marks

13. Write three differences between Taenia sodium and Taenia saginata.
14. Catalase test.
15. Name three selective media for Shigella.
16. Name three bacteria causing food poisoning.
17. Name three species of Schistosoma causing human infections.
18. Name any three pigment producing Bacteria.
19. NIH swab.
20. Draw a neat, labelled diagram of Egg of Trichuris trichiura.
21. Urease test.
22. Write three differences between bacillary dysentery and Amoebic dysentery.

Rajiv Gandhi University of Health Sciences, Karnataka

Second Year B.Sc. Medical Laboratory Technology Degree Examination – 21-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

BIOCHEMISTRY – II (RS-4)

Q.P. CODE: 3279

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Enumerate the types of laboratory balance. Explain the components and working of analytical balance with a neat diagram
2. Give an account of the types, clinical manifestations, diagnosis and management of diabetes mellitus
   OR
   Explain the various methods of blood collection techniques

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Prosperties of monosaccharides
4. SI units
5. Preparation of 10% NaOH solution
   OR
   Turbidimetry
6. Principle and applications of paper chromatography
7. Glucometers
8. Urine sample collection, storage and preservation
9. Centrifuge
10. Denaturation of proteins
    OR
    Therapeutic role of enzymes
11. Oral glucose tolerance test
12. Competitive inhibition

SHORT ANSWER 10 x 3 = 30 Marks

13. Glycosides
14. Ketosis
15. Isoelectric pH
16. Saturated and supersaturated solutions
17. Sugar acids
18. Different types of pipettes
19. Dessicator
20. Enumerate the different methods of blood urea estimation
21. Cuvettes
22. Invert sugar

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination - 26-Nov-2024

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 ESSAY (Any Two) 2 x 10 = 20 Marks

1. Enumerate the organisms causing hospital-acquired infections. Describe the source and modes of transmission of hospital-acquired infections.
2. Describe the life cycle of E. histolytica. How do you diagnose this infection in the laboratory?
3. Describe the morphology, life cycle and laboratory diagnosis of Taenia solium.

SHORT ESSAY (Any Six) 6 x 5 = 30 Marks

4. Anti Streptolysin O test
5. Urinary tract infection
6. Manifestations of Staphylococcus aureus
7. Balantidium coli
8. Microfilaria
9. Anthrax
10. Enumerate the morphological forms of Leishmania donovani.
11. Stormy clot reaction

SHORT ANWERS (Any Ten) 10 x 3 = 30 Marks

12. Enumerate three zoonotic diseases transmitted by consumption of milk.
13. Oxidase test
14. Black Water fever.
15. Name three species of Klebsiella.
16. Laboratory diagnosis of Hook worm infection
17. NIH Swab
18. Lepromin test
19. Selective media
20. Casoni's test
21. Passive immunization for Tetanus
22. IMViC test
23. Draw a neat labeled diagram of Giardia lamblia.

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year B.Sc. (M.L.T) Degree Examination – 26-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

MICROBIOLOGY – II (RS-4)

Q.P. CODE: 3280

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Discuss in detail pathogenesis and laboratory diagnosis of Mycobacterium Tuberculosis.
2. Describe the life cycle and clinical manifestations of Strongyloides stercoralis.
   OR
   Describe morphology and lab diagnosis of Entamoeba histilytica.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Antibiotic susceptibility test.
4. Sedimentation technique for stool examination.
5. String test.
   OR
   CAMP test.
6. **Balantidium coli**
7. Clinical manifestation of Treponema pallidum.
8. Laboratory diagnosis of Non-Gonococcal Urethritis.
9. Explain briefly Erythrocytic schizogony.
10. Methicillin resistant Staphylococcus aureus.
    OR
    Virulence factors of streptococcus pyogenes.
11. Widal test.
12. Dracunculus medinensis.

SHORT ANSWER 10 x 3 = 30 Marks

13. Name three bacteria causing meningitis.
14. **Wet mount for parasites**
15. Name three causative agents of UTI.
16. **NIH Swab**
17. Name three medically important species of plasmodium.
18. Name three non bile-stained eggs.
19. Catalase test.
20. Name three Gram positive bacillis.
21. Larva migrans.
22. Satellitism.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination – 28-Nov-2024

Time: Three Hours | Max. Marks: 80 Marks

PATHOLOGY – II (RS3)
Q.P. CODE: 3158

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 indications for bone marrow study. Describe the procedure of bone marrow aspiration in detail.
2. List the Romanowsky's stains. What is the principle and procedure for Lieshman's stain?
3. Describe electron microscope. Enumerate the types and uses of the same.

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

4. Describe the anticoagulants used in Haematology.
5. List the various mountants. Discuss mounting techniques.
6. Determination of HbF.
7. List the special stains for carbohydrates. Describe any one in detail.
8. Describe a cryostat.
9. **Prothrombin time.**
10. Preparation of specimens for museum.
11. Describe quality control in haematology.

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

12. Enumerate the test for iron deficiency anemia.
13. Clinical significance of LE cell.
14. List the platelet function tests.
15. **Morphology of Eosinophil.**
16. List the supravital stains.
17. Enumerate types of hematoxylin.
18. What are the uses of Buffy coat?
19. List the types of microtome knives.
20. Causes of lymphocytosis.
21. Enumerate the steps in tissue processing.
22. Normal values of WBC count.
23. What is ICDS classification?

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year B.Sc. (M.L.T) Degree Examination – 28-Nov-2024

Time: Three Hours Max. Marks: 100 Marks

PATHOLOGY – II (RS-4)

Q.P. CODE: 3281

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Describe Freezing microtome and cryostat. Add a note on Automatic slide stainer.
2. Describe the tests for investigation of megaloblastic Anemia.
   OR
   Describe normal hemostasis and mechanism of blood coagulation

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Application of computers in Pathology.
4. Automated tissue processor.
5. Procedure of hematoxylin and eosin staining.
   OR
   Special stains for collagen fibres.
6. Museum technology.
7. Qualify control in Hematology laboratory.
8. Hemoglobin electrophoresis.
9. Tests of autoimmune hemolytic anemia.
10. Schilling test.
    OR
    Reticulocyte count.
11. Assay of clotting factors.
12. Determinations of bleeding time.

SHORT ANSWER 10 x 3 = 30 Marks

13. Name three fixatives used in histopathology.
14. Uses of dark ground microscope.
15. Differential count of white blood cells.
16. Normal values of Hemoglobin and Hematocrit
17. Fibrin degradation products.
18. Clinical significance of hemoglobin estimation.
19. LE cell.
20. Anticoagulants used in hematology laboratory.
21. Diluting fluid used for RBC count and its composition.
22. Three uses of electron microscope.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. (MLT) Degree Examination – 28-Nov-2024

Time: Three Hours | Max. Marks: 80 Marks

PATHOLOGY – II (RS3)
Q.P. CODE: 3158

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 indications for bone marrow study. Describe the procedure of bone marrow aspiration in detail.
2. List the Romanowsky's stains. What is the principle and procedure for Lieshman's stain?
3. Describe electron microscope. Enumerate the types and uses of the same.

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

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5. List the various mountants. Discuss mounting techniques.
6. Determination of HbF.
7. List the special stains for carbohydrates. Describe any one in detail.
8. Describe a cryostat.
9. **Prothrombin time.**
10. Preparation of specimens for museum.
11. Describe quality control in haematology.

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

12. Enumerate the test for iron deficiency anemia.
13. Clinical significance of LE cell.
14. List the platelet function tests.
15. **Morphology of Eosinophil.**
16. List the supravital stains.
17. Enumerate types of hematoxylin.
18. What are the uses of Buffy coat?
19. List the types of microtome knives.
20. Causes of lymphocytosis.
21. Enumerate the steps in tissue processing.
22. Normal values of WBC count.
23. What is ICDS classification?

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Rajiv Gandhi University of Health Sciences, Karnataka

Second Year B.Sc. (M.L.T) Degree Examination – 28-Nov-2024

Time: Three Hours Max. Marks: 100 Marks

PATHOLOGY – II (RS-4)

Q.P. CODE: 3281

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Describe Freezing microtome and cryostat. Add a note on Automatic slide stainer.
2. Describe the tests for investigation of megaloblastic Anemia.
   OR
   Describe normal hemostasis and mechanism of blood coagulation

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Application of computers in Pathology.
4. Automated tissue processor.
5. Procedure of hematoxylin and eosin staining.
   OR
   Special stains for collagen fibres.
6. Museum technology.
7. Qualify control in Hematology laboratory.
8. Hemoglobin electrophoresis.
9. Tests of autoimmune hemolytic anemia.
10. Schilling test.
    OR
    Reticulocyte count.
11. Assay of clotting factors.
12. Determinations of bleeding time.

SHORT ANSWER 10 x 3 = 30 Marks

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19. LE cell.
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21. Diluting fluid used for RBC count and its composition.
22. Three uses of electron microscope.

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