SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

M.Sc. Medical Laboratory Technology (M.Sc. MLT)

Second Year Semester-III, February-2020 Examination.

Time: 3.00 Hrs. **[Max. Marks: 100]**

Paper-I

Clinical Hematology

Q.P. Code: M3070

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

LONG ESSAY **2x10=20 Marks**

1. Mention the role of automation in hematology laboratory. Describe the principle of automated blood cell counter. Write various parameters obtained from blood cell counter.
2. Define leukaemia, Write difference between acute lymphoid leukemia and acute myeloid leukaemia.

SHORT ESSAY **5x10=50 Marks**

3. Lab diagnosis of sickle cell anemia.
4. Pre-examination errors in haematology laboratory.
5. Use of pearls stain in hematology laboratory.
6. Indications of bone marrow.
7. Methods of haemoglobin estimation.
8. Aplastic anaemia causes & diagnosis.
9. Vitamin-B12 & folate assay.
10. Lab diagnosis of hereditary hemolytic anemia.
11. Causes and diagnosis of normocytic normochromic anemia.
12. Philadelphia chromosome.

SHORT ANSWERS **3x10=30 Marks**

13. Sickling test.
14. Three causes of neutropenia.
15. Methods of doing peripheral blood smear.
16. Three causes of macrocytic anemia.
17. Test for G6PD deficiency.
18. Write three parasitic infections of blood.
19. Three causes of pancytopenia.
20. Anticoagulants used in haematology.
21. Calculation of MCHC.
22. Uses of WBC pipette.

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Paper-II

Blood Transfusion

Q.P. Code: M3080

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

LONG ESSAYS **2x10=20 Marks**

1. Enlist different transfusion reaction. Describe investigation done to transfusion reactions.
2. Enumerate different blood donors. Describe blood collection from donor in detail.

SHORT ESSAYS **5x10=50 Marks**

3. Emergency cross matching.
4. Preparations, storage, life span and importance of FFP.
5. Blood grouping
6. Coombs test.
7. Biosafety in blood bank.
8. Transfustion transmitted virus and their investigations.
9. Changes occurred in stored blood.
10. Quality control in blood bank.
11. Du test and its importance.
12. ABO antibody titration

SHORT ANSWERS **3x10=30 Marks**

13 .Bombay blood group.
14. SAGM.
15. Platelet rich plasma.
16. Uses of pooled cells.
17. MNS system
18.Exchange transfusion
19. Storage of blood components.
20. Hemoglobin estimation in donation camps
21. Post donation care.
22 .Name three scientist in blood bank.

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Paper -I

Clinical Biochemistry

Q.P. Code: M3421

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

Long Essay 2x20 = 40 Marks

1. Explain the structure, Biosynthesis and Secretion of Thyroid hormones. Describe in detail the principle of any one analytical technique for the estimation of thyroid hormones. 5+15
2. Enumerate the Liver function tests. Classify Jaundice and describe the findings of blood and urine parameters in different types of Jaundice. 5+5+10

Short Essay 6x10 = 60 Marks

3. What is Metabolic Acidosis? list the causes of Metabolic Acidosis and Describe the Biochemical changes observed in Metabolic Acidosis . 2+4+4
4. What are Carcinogens?. Give examples of chemical carcinogens .Describe the mechanism by which chemical carcinogens cause cancer. Add a note on Ames test. 2+2+4+2
5. What is meant by Km and Vmax? What is the importance of Km in enzymology 4+6
6. Enumerate Renal Function Tests. What is meant by Clearance Test? Describe in detail Urea clearance and Creatinine Clearance. 3+2+5
7. Explain in detail the role of Respiratory and Renal mechanism in Blood pH regulation . 2+2+6
8. Write the Biological reference values of Serum Sodium, Potassium and Chloride. How is Sodium and Potassium Regulated in the biological system with special reference to hormones? 3+3.5+3.5

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Time: 3.00 Hrs. **[Max. Marks: 100]**

Paper -II

Biochemistry: Metabolism and Metabolic Disorders

Q.P. Code: M3422

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

Long Essay 2x20 = 40 Marks

1. Name the aromatic amino acids. Write the steps of metabolism of Tyrosine. List the Biologically Important compounds derived from Tyrosine. Add a note on inborn errors of metabolism of Tyrosine. 2+10+3+5
2. Write the steps involved in TCA Cycle. Add a note on its Energetics. Explain the amphipathic role of TCA cycle. 10+5+5

Short Essay 6x10 = 60 Marks

3. What are Lipoproteins? Classify lipoproteins and write the site of synthesis and functions of each lipoprotein. Add a note on reverse cholesterol transport. 1+7+2
4. Enumerate different sources of Ammonia. Mention its normal blood level. Explain why ammonia is toxic to brain.5+1+4
5. What is Glucose tolerance test? Describe procedure and interpretation of oral GTT. 2+3+5
6. Describe the Watson and crick model of DNA structure with neat labeled diagram .Add a note on Chargaff's rule. 7+3
7. What are the Purine and Pyrimidine nucleotides present in DNA? Write the steps involved in the salvage pathway for the synthesis of purine nucleotides. Add a note on Lesch Nyhan syndrome. 2+5+3
8. Define β-oxidation. Explain the β- oxidation of Palmitic acid. Add a note on its Energetics

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Paper -I

Microbiology: Systemic Bacteriology & Immunology

Q.P. Code: M3431

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

Long Essay **2 X 20 = 40 Marks**

1. Enumerate the aetiological agents of bacterial meningitis .Describe the pathogenesis and lab diagnosis of Streptococcus pneumoniae.

2. Enumerate antigen antibody reaction .Describe the principle and diagnostic application of agglutination with suitable examples.

Short Essay **6 X 10 = 60 Marks**

3. Describe the suppurative lesions and laboratory diagnosis of Streptococcus pyogenes
4. Laboratory diagnosis of Syphilis.
5. Describe the clinical features and laboratory diagnosis of Diphtheria
6. Describe the modes of transmission of infection
7. Monoclonal antibodies
8. Describe the structure and biological functions of IgM

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Paper -II

Microbiology: Virology and Mycology

Q.P. Code: M3432

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

Long Essay **2 X 20 = 40 Marks**

1. Describe the morphology, pathogenesis & laboratory diagnosis of Human Immunodeficiency Virus.

2. Name the genera, describe microscopic morphology and diseases caused by dermatophytes .Add a note on the lab diagnosis

Short Essay **6 X 10 = 60 Marks**

3. Describe the mode of transmission, clinical features and laboratory diagnosis of Dengue fever.

4. Describe the clinical features and laboratory diagnosis of Herpes simplex virus

5. Pathogenesis and laboratory diagnosis of Rabies

6. Describe the the mode of transmission ,clinical features and laboratory diagnosis Cryptococosis

7. Enumerate and describe the Dimorphic fungi and diseases caused by them.

8. Laboratory diagnosis of Fungal infections

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