

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

M.Sc. Medical Laboratory Technology (MLT) (Semester - I)

May 2022 Examination

Time: 3 Hrs.

[Max. Marks: 100]

Paper – I

**Clinical Biochemistry, Biomedical Techniques
& Laboratory Management-I**

*Your answer should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary.
(Use separate answer booklet for section A & B)*

Section – A

Clinical Biochemistry

(50 Marks)

Q.P. Code: M1015

LONG ESSAY

1 X 20 = 20 Marks

1. Write the dynamics of blood glucose homeostasis. What is the role of hormones in achieving this? Add a note on hyperglycemia. (5+10+5)

SHORT ESSAY

5X 6= 30 Marks

2. What are non-protein nitrogenous substances? Give examples. Write biomedical application of any three. (1+2+3)
3. Explain the method of DNA isolation.
4. Define enzymes? Describe various types of enzyme inhibition with suitable examples. (1+5)
5. What is glucose tolerance test (GTT)? Write the procedure and precautions for GTT. (1+2+3)
6. What are lipoproteins? Give examples. Name any two techniques for separation of lipoproteins in blood sample. (2+2+2)

Section – B

(50 Marks)

Biomedical Techniques & Laboratory Management

Q.P. Code: M1016

LONG ESSAY

1 X 20 = 20 Marks

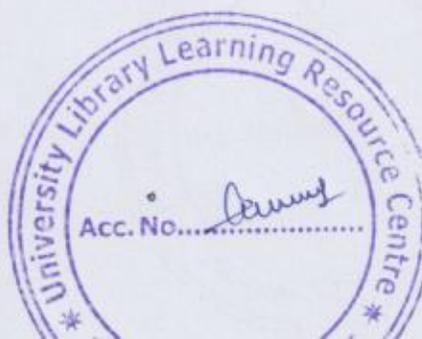
1. Define electrophoresis. Name different types of electrophoresis. Write the principle of electrophoresis. List any four applications and limitations of each type of electrophoresis. (2+5+5+8)

SHORT ESSAY

5X 6= 30 Marks

2. What is flame photometry? Explain the importance of flame photometry in clinical laboratory. (2+4)
3. Define centrifugation and add a note on ultracentrifugation and its applications. (1+2+3)
4. Explain the principle and applications of atomic absorption spectrometry. (4+2)
5. What are radioactive isotopes? Write any two therapeutic and two diagnostic applications. (2+2+2)
6. Define chromatography. Describe in brief about partition chromatography with its application. (1+5)

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Paper - II

Clinical Microbiology, Immunology & Molecular Biology

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(Use separate answer booklet for section A & B)*

Section - A

Clinical Microbiology

(50 Marks)

Q.P. Code: M1025

Long Essay

1x20=20 Marks

1. Enumerate the agents causing Urinary Tract Infection? Describe the lab diagnosis of Urinary Tract Infection? (3+7)

Short Essay

5x6=30 Marks

2. Hospital acquired infections
3. Chemical disinfectants: Types mode of action & uses.
4. Laboratory diagnosis of syphilis
5. Describe the methods of antibiotic susceptibility testing.
6. Laboratory diagnosis of diphtheria

Section - B

Immunology & Molecular Biology

(50 Marks)

Q.P. Code: M1026

Long Essay

1x20=20 Marks

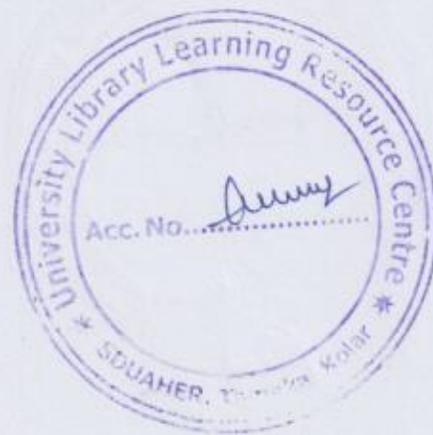
1. Define immunity. What is innate immunity? Describe its mechanism of the cells involved in innate immunity (2+2+3+3)

Short Essay

5x6=30 Marks

2. Biological functions of Complement
3. Major Histocompatibility Complex
4. Biomedical waste management
5. Type IV Hypersensitivity reaction
6. Immunofluorescence: principle and types

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Paper – III

Haematology & Blood Transfusion

Your answer should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

(Use separate answer booklet for section A & B)

Section – A

Haematology

(50 Marks)

Q.P. Code: M1035

LONG ESSAY

1 X 20 = 20 Marks

1. Define anemia. Enumerate causes for macrocytosis. Discuss the laboratory investigation of megaloblastic anemia?

SHORT ESSAY

5X 6= 30 Marks

2. Laboratory diagnosis of chronic myeloid leukemia
3. Reticulocyte count – Procedure and interpretation
4. Laboratory diagnosis of multiple myeloma
5. Cytochemistry in leukemia
6. Paroxysmal Nocturnal Hemoglobinuria

Section – B

Clinical Pathology & Immunopathology

(50 Marks)

Q.P. Code: M1036

LONG ESSAY

1 X 20 = 20 Marks

1. List the indications for Blood transfusion and describe transfusion reactions

SHORT ESSAY

5X 6= 30 Marks

2. Chemical examination of urine for ketone bodies and interpretation
3. Type 3 Hypersensitivity reaction
4. Stool examination
5. Erythroblastosis fetalis
6. Idiopathic thrombocytopenic purpura

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