



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)
M.Sc. Medical Laboratory Technology (Semester-II) Examination November 2025

Time: 3 Hrs.

[Max. Marks: 100]

Subject: Biochemistry-II

Q.P Code: MA2232

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

LONG ESSAY

2 X 20 = 40 Marks

1. What is Cerebrospinal fluid? Name the normal constituents of CSF with their biological range.. Describe the procedure of collection of CSF. Mention the characteristic features of CSF in normal and diseased conditions (2+3+5+10).
2. Explain the various techniques used for purification of a protein.

SHORT ESSAY

6X 10 = 60 Marks

3. Explain Automation in urine chemistry
4. Explain the principle, procedure and precaution to be taken while collecting and transporting blood for blood gas analysis. Give the clinical applications
5. Briefly explain a laboratory information management system (LIMS).
6. Explain the laws, principle, application and advantages of Spectrophotometry.
7. Explain the synthesis of bilirubin. Explain Van den Bergs test and its use in classifying the different types of jaundice (7+3)
8. What is meant by Redox potential? Explain Chemiosmotic theory (3+7).

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Time: 3 Hrs.

[Max. Marks: 50]

Sec-A
Clinical Microbiology
Q.P Code: MA2265

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

LONG ESSAY

1 X 20 = 20 Marks

1. Discuss the morphology, modes of transmission, clinical features, and laboratory diagnosis of Human Immunodeficiency Virus (HIV)

SHORT ESSAY

3X 10 = 30 Marks

2. Describe the pathogenesis and laboratory diagnosis of Falciparum malaria
3. Explain the pathogenesis, clinical features and laboratory diagnosis of Amoebic dysentery
4. Classify Dermatophytes. Describe the clinical features and laboratory diagnosis of infections due to Dermatophytes.

[Max. Marks: 50]

Sec-B
Molecular Biology
Q.P Code: MA2266

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

LONG ESSAY

1 X 20 = 20 Marks

1. Describe the principle and applications of FISH with suitable examples.

SHORT ESSAY

3X 10 = 30 Marks

2. Explain the steps involved in transcription.
3. Explain the steps involved in rDNA technology.
4. Describe the molecular basis of Phenylketonuria and Homocystinuria.

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Examination**

Time: 3 Hrs.

[Max. Marks: 50]

Sec-A

Hematology Clinical Pathology

Q.P Code: MA2275

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

LONG ESSAY

1 X 20 = 20 Marks

1. Describe the laboratory approach in a case of hemorrhagic disorders? Define and describe etiopathogenesis, clinical features and laboratory investigations in Disseminated Intravascular Coagulation

SHORT ESSAY

3X 10 = 30 Marks

2. Describe in detail about Quality Control in Hematology Laboratory.
3. Describe etiopathogenesis, clinical features and laboratory investigations in a case of Anti-phospholipid Syndrome.
4. Discuss in detail about Biomedical Waste Management and their treatment.

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[Max. Marks: 50]

Sec-B

Medical Genetics

Q.P Code: MA2276

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

LONG ESSAY

1 X 20 = 20 Marks

1. Describe the classification of genetic diseases with suitable examples

SHORT ESSAY

3X 10 = 30 Marks

1. Describe the salient features of autosomal dominant inheritance.
2. Describe the molecular basis of purine/pyrimidine disorders.
3. Write note on salient features of Human genome project

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Time: 3 Hrs.

[Max. Marks: 100]

Research Methodology & Biostatistics
Q.P Code: MA2280

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 basic principles of ethics in research with suitable examples. Describe the types and methods of obtaining consent for research.
2. a) What are tests of significance? Classify with examples
b) In an anti-malaria campaign in a certain area, quinine was administered to 200 persons out of a total population of 400. The number of fever cases is shown below:

Treatment	Fever	No fever
Quinine	30	170
No quinine	70	130

Discuss the usefulness of quinine in checking malaria

(Table value of chi-square at 5% probability level for one degree of freedom is 3.84)

SHORT ESSAY

6X 10 = 60 Marks

3. Explain in detail diagrammatic presentation of data with examples
4. Describe the steps in conducting a Randomized Controlled Trial.
5. Describe the characteristics of a good Research question. Describe how you would choose an appropriate study design for a research question with an example.
6. What are parametric tests and When it is used? Explain the different parametric tests
7. Describe the role of softwares in Data entry and analysis. Enumerate the common errors and biases encountered while using them.
8. What is dispersion? Explain measure of dispersion with their merits and demerits