



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

M.Sc. Molecular Biology & Human Genetics Semester-III

May 2025 Examination

Time: 3 Hrs.

[Max. Marks: 100]

Medical Genetics

Q.P Code: M3580

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

Long Essay

2X20=40 Marks

1. Describe different types of structural aberrations in chromosomes with suitable examples
2. List various molecular tests available, and describe PCR-RFLP and sanger sequencing with suitable examples

Short Essay

6X10=60 Marks

3. Define teratogen, examples and describe the causes of birth defects
4. Describe the pedigree analysis and list the factors affecting the pedigree analysis
5. Describe the attributes of sex-linked inheritance pattern with suitable example
6. Describe the role of genetic testing in the management of cancers
7. Describe invasive and non-invasive methods used for prenatal diagnosis
8. Describe the principle and applications of GTG banding in genetic testing.

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M.Sc. Molecular Biology & Human Genetics

Semester-III May 2025 Examination

Time: 3 Hrs.

[Max. Marks :100]

Molecular Biology Techniques

Q.P Code: M3590

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

Long Essay

2X20=40 Marks

1. Explain the principle, steps involved and applications of DNA fingerprinting.
2. Define cell sorting. Explain the principle of Fluorescence Activated Cell Sorting and list its applications.

Short Essay

6X10=60 Marks

3. Explain the principle of hot start polymerase chain reaction and mention its applications.
4. Explain the principle of HPLC. Comment on the resolution power of HPLC.
5. Describe the general properties of PCR primer.
6. Explain the principle and applications of restriction-fragment length polymorphism technique.
7. Explain the principle and applications of Western blotting.
8. Explain the principle and applications of density gradient centrifugation.

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SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
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M.Sc. Molecular Biology & Human Genetics Second Year (Semester-III)
May 2025 Examination

Time: 3 Hrs.

[Max. Marks: 100]

Research Methodology and Biostatistics

Q.P Code: M3600

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 salient features of PubMed
2. a) What is probability sampling? Illustrate with examples probability sampling methods
b) Explain the role of t test in data analysis

SHORT ESSAY

6X 10 = 60 Marks

3. Describe the features of Belmont principles.
4. Explain the process of blinding in clinical trials.
5. Explain the features of research question.
6. The following are the weights in Kgs of 8 patients with lung disease
75, 60, 55, 80, 45, 70, 40, 85.
Calculate the Mean and Standard deviation and interpret the result.
7. What is correlation and explain various types of correlation with examples.
8. Discuss the role of tabulation in data presentation and mention various principles
Involved in tabulation.

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