

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

Master of Philosophy (M.Phil.)

Molecular Cell Biology and Medical Genetics (Semester - III)

May – 2016 Examination

Time: 3 Hrs.

[Max. Marks: 100]

Paper – I
Research Methodology & Biostatistics

Q.P Code: 6113

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

Section – A

Research Methodology

(50 Marks)

(Use Separate Answer booklet for Section “A” and Section “B”)

Short Essay (Each Question 5 marks)

10 X 5 = 50 Marks

1. Critical appraisal of an article.
2. Validity of a research questionnaire.
3. Study protocol.
4. Refining research question – SMART.
5. Systematic review.
6. GCP.
7. Informed consent.
8. Falsification of data.
9. Good scientific paper.
10. Bibliography.

Section – B

Biostatistics

(50 Marks)

Short Answer (Each Question 5 marks)

10 X 5 = 50 Marks

1. Standard deviation.
2. Null hypothesis.
3. Median and its application.
4. Correlation.
5. Post hoc tests.
6. Bias.
7. Checking the data using statistical methods.
8. Data variables.
9. Stratified sampling.
10. Randomization.

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Paper – II

Area of Specialization

Q.P Code: 6123

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

Long Essay (Each Question 10 marks)

10 X 10 = 100 Marks

1. Discuss in detail on homeostasis of blood glucose.
2. Describe the pathophysiology and complication of obesity.
3. What is prediabetic state? How is it detected? What is its significance?
4. Explain in detail about the detection of UCP3 gene polymorphism by using RFLP.
5. Write the principle and applications of PCR. Add a note on real time PCR.
6. Role of UCP in obesity.
7. What is karyotyping? Write its significance with a note on FISH.
8. Explain chemiosmotic hypothesis with a note on thermogenin.
9. What is DNA sequencing? Explain the different methods of DNA sequencing with a note on Maxam- Gilbert technique.
10. Describe the factors affecting UCP3 gene expression.

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