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

2012-13

Master of Philosophy (M.Phil)
Molecular Cell Biology and Medical Genetics
(Semester - II)
October – 2013 Examination

Time: 3 Hrs. [Max. Marks: 100]

Paper – I
Cytogenetics
Q.P Code: 6112

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

Section – A Cytology (50 Marks)
(Use Separate Answer booklet for Section "A" and Section "B")

LONG ESSAY **2 X 10 = 20 Marks**

1. Explain the mechanism of comparative genomic hybridization (CGH) and their applications.
2. Discuss molecular genetics of leukemias.

SHORT ESSAY **3 X 5 = 15 Marks**

3 IHC of non-epithelial tumors.
4 Molecular genetics of lymphoma.
5 Inter phase Cytogenetics.

SHORT ANSWERS **5 X 3 = 15 Marks**

6 Autosomes.
7 Sex chromosomes.
8 Hydatidiform mole
9 BRCA 1 and 2.
10 Molecular biology of pancreatic tumors.

Section – B Genetics (50 Marks)
(Use separate Answer booklet for Section-B)

LONG ESSAY **2 X 10 = 20 Marks**

1. Write an essay on principal of independent assortment and deviations from Mendel's findings.
2. Role of HLA system in transplantation of human tissue.

SHORT ESSAY **3 X 5 = 15 Marks**

3 Inactivation of X chromosomes.
4 Multiple malformation syndrome.
5 Factors influencing development.

SHORT ANSWERS **5 X 3 = 15 Marks**

6 Sex linkage.
7 Hemolytic diseases of new born.
8 Rh-Null blood group.
9 Eugenics.
10 Genetic investigations.

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October – 2013 Examination

Time: 3 Hrs. [Max. Marks: 100]

Paper – II

(Molecular cell Biology)

Q.P Code: 6222

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

LONG ESSAY **2 X 10 = 20 Marks**

1. Describe principle, procedure and applications of PCR.
2. Describe gene control region for a typical eukaryotic gene.

SHORT ESSAY **10 X 5 = 50 Marks**

3 Tumor markers
4 Mechanism of action of anti-cancer drugs
5 Biological database
6 Ethics in human genome project
7 Various vectors used in gene therapy
8 Restriction fragment length polymorphism
9 DNA markers in disease diagnosis
10 Northern blotting
11 Micro RNA
12 Telomeres

SHORT ANSWERS **10 X 3 = 30 Marks**

13 Plasmids
14 Tandem repeats
15 DNA polymerase
16 DNA ligase
17 Single nucleotide polymorphism
18 Oncogenes
19 Structure of gene
20 Reverse transcription
21 Transgenesis
22 Nucleosome

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