2011-12 mphil

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 - II)
January-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. Discuss the molecular genetics in Non-Hodgkin's lymphoma
2. Discuss the protein kinase signelling pathway involved in human cancer

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

3 Molecular pathogenesis of colonic cancer
4 Cytogenetic assesruant and clinical utility
5 Discuss abnormality in chromosome structure

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

6 Spindle check point
7 Y chromosomal disorders
8 FISH
9 Mendelian autosomal dominent disorders
10 RT-PCR

Section – B Genetics (50 Marks)

(Use separate Answer booklet for Section-B)

LONG ESSAY **2X10 = 20 Marks**

1. Enumerate genes involved in development. Explain any one in detail
2. Enumerate single gene disorders. Explain in detail anyone of them.

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

3 Mendelian laws inheritance
4 Multifactorial inheritance
5 HLA system

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

6 Barr Body
7 Define genetic counseling
8 Zinc finger genes
9 Multiple alleles
10 Immune system disorders

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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 the procedures used for making gene replacements in mice.
2. Define PCR technique and explain its applications with suitable examples.

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

3 Western blotting.
4 Virus based vector.
5 Ames test for mutagenicity.
6 Tumour suppressor genes.
7 Anti-cancer compounds.
8 Benefits of Human Genome Project.
9 Helix-turn-helix motif.
10 RNA splicing.
11 DNA in diagnosis of genetic diseases.
12 Point mutations in cancer.

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

13 Microarrays.
14 Reverse transcription.
15 DNA ligase.
16 Nucleosomes.
17 BLAST.
18 Single nucleotide polymorphism.
19 DNA finger printing.
20 Restriction enzymes.
21 Lac operon.
22 Telomeres.

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