2012-13.

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 – I Examination March 2013

Time: 3 Hrs. Max. Marks: 100]

Paper – I

Cytogenetics

Q.P Code: 6111

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. Write an Essay on abnormal cell proliferation.
2. Explain the cell Cycle. Add notes on its regulation at molecular level.

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

3 Transport of specimens.

4 Genes.

5 Eukaryotes.

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

6 Mitosis.

7 CSF

8 Separation of specimens.

9 Organelles.

10 Nucleolus.

Section – B Genetics (50 Marks)

(Use separate Answer booklet for Section-B)

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

1. How traits are inherited according to preforminism.
2. Enumerate semi-conservative replication of DNA.

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

3 Usage of genetical assessment in clinical utility.

4 Mosaicism and its occurance.

5 The effect of crossing over linkage.

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

6 Epistatsis.

7 Mendelian law of segregation.

8 Lethal gene.

9 Mutation.

10 Properties of gene.

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Time: 3 Hrs. Max. Marks: 100]

Paper – II
(Molecular cell Biology)

Q.P Code: 6121

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 transcription initation and termination in prokaryotes.
2. Describe the major experimental results which helped in deciphering genetic code.

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

3 Describe the organization of eukaryotic genome.

4 Explain rolling circle model of DNA replication.

5 Discuss nucleotide excision repair with an example.

6 Explain how polypeptide synthesis is terminated.

7 Explain the steps involved in cloning of a gene coding for growth factor.

8 Explain the translocation of proteins from Endoplasmic Reticulum to mitochondria and plasma membrane.

9 Discuss various methods employed in purification of nucleic acids.

10 Explain the biosynthesis of inosine monophosphate .

11 Discuss various agents which damage DNA.

12 Explain the role of DNA modification enzymes in molecular cloning

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

13 What are Oka-zaki fragments? Give their importance.

14 Compare the helical parameters of B- and Z-DNA.

15 Name the regulatory enzyme and its effectors in purine biosynthesis.

16 What is a pseudo gene? Give its features.

17 Explain an experimental result that proved polypeptide chain elongation from NH2 terminal

18 What in DNA- higase ? give its application.

19 How is denaturation of DNA monitored?

20 What makes plasmid DNA an ideal cloning vector?

21 Give the role of amino-acyl tRNA synthetases in translation

22 What are ribozymes? Give their applications.

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