2011-12

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

Post Graduate Diploma in Genomic Technology (PGDGT)

Semester – I Examination May 2012

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

CYTOGENETICS

Paper - I

Q.P Code : 5111

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' & Section 'B'

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

1. Write in detail on tumour supressor gens and tumours associated with mutation of tumour supressor gens.
2. Discuss the structure and functions of cell membrane.

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

3 Mechanism of apoptosis

4 Cytoskeleton, functions and abnormality

5 Structure and function of nucleolus

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

6 Golgi complex and functions

7 Cell membrane receptors

8 Preservation of specimen for molecular biology

9 Point mutation

10 Heterophagy

P.T.O

Section – B Genetics (50 Marks)

(Use separate Answer Booklet for Section 'B')

LONG ESSAY — **2 X 10 = 20 Marks**

1. Define Meiosis. Explain the steps in meiosis I and II in detail.
2. Define Inheritance. Describe Autosomal dominant inheritance in detail.

SHORT ESSAY — **3X 5 = 15 Marks**

3 Types of Banding in Karyotyping

4 Cell Cycle

5 Turner Syndrome

SHORT ANSWERS — **5 X 3 = 15 Marks**

6 Mention the types of chromosomes based on centromere position.

7 Nondisjunction

8 Mention any three applications of genetics in medical specialities.

9 Mitochondrial inheritance

10 Lyon hypothesis

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(A DEEMED TO BE UNIVERSITY) MAY 2012

Post Graduate Diploma in Genomic Technology (PGDGT)

30-5-2012

(Semester - I)

Time : 3 Hrs. **Max. Marks : 100**

Paper – II

Molecular Biology

Q.P Code : 5121

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 machinery and mechanism of protein biosynthesis in prokaryotes
2. Explain the mechanisms of degradation of purines and pyrimidines. Highlight the disorders associated with purine and pyrimidine metabolism.

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

3 Protein kinases

4 Structural differences among A, B and Z-DNA

5 Principle and application of southern and northern blotting

6 Zinc-finger motif

7 Telomers-structure and function

8 Supercoiling of DNA

9 Origin of replication

10 DNA topoisomerases

11 Extrachromosomal elements

12 Features of exons and introns

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

13 Rho dependent and Rho independent termination

14 Gout

15 Wobble hypothesis

16 Lesch Nyhan syndrome

17 Characteristics of Genetic code

18 Orotic aciduria

19 Reverse transcription

20 Post-transcriptional modifications

21 Nucleosome

22 Molecular chaperones

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