**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH**
(A DEEMED TO BE UNIVERSITY)
**Post Graduate Diploma in Genomic Technology (PGDGT)**
**Semester-I Examination February-2014**

Time: 3 Hrs. Max. Marks: 100]

# Paper – I
# Cytogenetics
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" and Section "B")***

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

1. Explain the mechanism and regulation at molecular level of cell cycle.
2. With suitable examples explain Chromosomes.

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

3 Cell inclusions
4 Apoptosis
5 Tumor suppressor

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

6 Chorionic villus sampling
7 Chromatids
8 Pericardial fluid analysis
9 Drumsticks
10 Transit specimen preservation

## Section – B Genetics (50 Marks)
***(Use Separate Answer booklet for Section-B))***

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

1. Application of genetics in medical speciality.
2. Chromosomal abnormalities.

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

3 Sketch and label four types of chromosomes based on position of centromere.
4 Differentiate polytene chromosome and chromosomal puffs
5 Compare mitosis with that of meiosis

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

6 Autosomal recessive disorders
7 Dihybrid cross, their phenotypic and genotypic ratio
8 Interphase chromatin
9 Classification of mutation
10 Abnormal meiotic division

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# Post Graduate Diploma in Genomic Technology (PGDGT)

## Semester-I Examination February-2014

Time: 3 Hrs. Max. Marks: 100]

## Paper – II

## Molecular Cell 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. Give a comparative account of replication in prokaryotes and eukaryotes.
2. Explain the mechanism of protein synthesis in prokaryotes.

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

3 Discuss the biosynthesis of pyrimidines.

4 Explain the post transcriptional modification of eukaryotic mRNA.

5 Describe various kinds of mutation. Add a note on their clinical significance.

6 How are proteins translocated across Golgi and Endoplasmic Reticulum? Explain.

7 Give an account of structure, functions and regulation of RNA polymerase from E.coli.

8 What is the role of nucleotide analogues in clinical studies? Explain with examples.

9 What makes an ideal cloning sector? Elaborate various factors which influence cloning efficiency.

10 How is spechophotometry employed in quantification, purification and separation of nucleic acids? Explain.

11 Explain how stop codons are recognized and used for protein synthesis termination.

12 Distinguish between type-I and type-II restriction enzymes.

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

13 Unusual Bases.

14 Out line the rRNA processing in eukaryotes.

15 How is direction of protein elongation identified?

16 Define central dogma of molecular biology.

17 What are okazatic fragments? How are they identified.

18 Give the features of SOS repair system.

19 Give the clinical symptoms and etiology of Lesch-Nyhan synderome

20 List the enzymes involved in making recombinant DNA molecule.

21 What is telomerase? Give its significance.

22 Give the role of sigma factor in prokaryotic transcription.

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