SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology & Human Genetics
Second Year (Semester-IV)
September – 2016 Examination

Time : 3.00 Hrs. **[Max. Marks : 100]**

Paper-I

GENETIC ENGINEERING AND BIOTECHNOLOGY

Q.P Code : 116

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

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

1. How are cDNA libraries constructed? Add a note on screening of cDNA libraries.
2. What is gene silencing? Explain the technique involved and its applications.

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

3. Steps involved in making knockout mice.
4. Role of DNA ligase in cloning.
5. Recombinant therapeutics.
6. Characteristics and applications of plasmids
7. Process of introducing foreign DNA into plants by agrobacterium tumefaciens.
8. Intracellular barriers to gene therapy.
9. Site directed mutagenesis and its application.
10. Various methods of gene transfer in mammalian cells.
11. TA cloning. Benefits and drawbacks.
12. Use of protein fusion tags in protein purification.

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

13. Alkaline phosphatase.
14. Restriction enzymes.
15. Recombinant interferon.
16. Liposomes.
17. Stem cells.
18. Ammonium sulphate preticipation of proteins.
19. Patenting.
20. Nano particle mediated gene therapy.
21. What is directed protein evolution?

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology & Human Genetics
Second Year (Semester-IV)
September – 2016 Examination

Time : 3.00 Hrs. **[Max. Marks : 100]**

Paper-II

MOLECULAR BIOLOGY AND HUMAN GENETICS

Q.P. Code : MBHG-117

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

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

1. What is epistasis? Explain its various types with examples.
2. Explain the phenomenon of genomic imprinting with a suitable example.

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

3. Qualitative and quantitative traits.
4. Twin studies.
5. Genetics of achondroplasia.
6. Neural tube defects.
7. Recombination frequency.
8. Human Genome Project.
9. Pseudocholinesterase deficiency.
10. Incomplete dominance.
11. Significance of pharmacogenetics.
12. Genetics of non-syndromic hearing loss.

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

13. Phenocopy.
14. Lethal genes.
15. Molecular basis of polycystic kidney disease.
16. Two point mapping.
17. Genome wide association studies.
18. Common sources of mutation.
19. Give two examples each for monogenic, polygenic and multi factorial traits.
20. Risk ratio.