

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology & Human Genetics

Second Year (Semester-IV)

July – 2017 Examination

Time : 3.00 Hrs.

[Max. Marks : 100]

Paper-I

GENETIC ENGINEERING AND BIOTECHNOLOGY

Q.P Code : MBHG - 116

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

1. Discuss the recombinant vaccines in detail and enlist their clinical applications.
2. Explain the principle, methods and applications gene silencing.

SHORT ESSAY

10X 5 = 50 Marks

3. Explain the clinical applications of embryonic stem cells and induced pluripotent cells.
4. Explain the general procedure for tagged protein production and purification.
5. Write a note on plasmid, Cosmid and Phagemid.
6. Explain the mechanism of action of infliximab.
7. Describe the applications of DNA ligase, Alkaline Phosphatase and Polynucleotide kinase.
8. Explain the methods for transformation and screening of transformants.
9. Write a note on the mechanism of action of Trastuzumab.
10. Explain the methods for directed evolution of proteins.
11. Explain the principle, methodology and applications of site directed mutagenesis.
12. Write a detailed account on IPR.

SHORT NOTE

10 X 3 = 30 Marks

13. Mention the clinical applications of tissue plasminogen activator.
14. Enlist the Properties of DNA polymerase I.
15. State the differences between BAC and YAC.
16. Define end labelling.
17. Write a short note on GST tag.
18. Enlist the properties of stem cells.
19. Write the clinical applications of erythropoietin.
20. Mention the side effect of gene therapy.
21. What are protein bio-similar? Give an example.
22. Define knock out animal? Give an example.

**M.Sc. Molecular Biology & Human Genetics
Second Year (Semester-IV)**

July – 2017 Examination

Time : 3.00 Hrs.

[Max. Marks : 100]

Paper-II

MOLECULAR BASIS OF HUMAN DISEASES-II

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. Explain triplet nucleotide expansion disorder with an example,
2. Discuss the role of Genetic polymorphisms in drug metabolism citing any two suitable examples.

SHORT ESSAY

10X 5 = 50 Marks

3. Dominant epistasis.
4. Differentiate between continuous and discontinuous inheritance.
5. Familial aggregational studies.
6. Genomic imprinting.
7. Sources of spontaneous mutation.
8. Marfan syndrome.
9. What is the genetic basis of prader willi Syndrome.
10. LOD analysis.
11. Explain candidate gene approach.
12. Pseudocholinesterase deficiency.

SHORT NOTE

10 X 3 = 30 Marks

13. Incomplete dominance.
14. Multifactorial traits.
15. Penetrance.
16. Risk ratio.
17. Mosaicism.
18. Recombinational frequency.
19. What do you mean by positional cloning.
20. Germline mutation.
21. Lethal genes.
22. Pleiotropy