SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology and Human Genetics Semester-IV

September - 2020 Examination.

Time: 2.00 Hrs. **[Max. Marks: 60]**

Paper II

Molecular Basis of Human Diseases II

Q P. Code: M4192

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary

LONG ESSAY **1x10=10 Marks**

1. Explain the role of twin studies in genetics.

SHORT ESSAY **7X5=35 Marks**

2. Explain the genetic basis of long QT syndrome
3. Explain the genetic basis of achondroplasia.
4. Explain the genetic basis of myotonic dystrophy.
5. Explain the genetic basis of variable expressivity.
6. Explain the attributes of modifier gene.
7. Describe the impact of genetic variation in *G6PD* gene.
8. Explain the phenomenon of anticipation.

SHORT ANSWERS **5X3=15 Marks**

9. Describe the salient features of spontaneous mutation.
10. Describe the attributes of human genome project.
11. Describe the attributes of familial aggregation studies.
12. Describe the genetic basis of Alzheimer's disease.
13. Describe the salient features of genome-wise association study.

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Paper I

Biotechnology & Genetic Engineering

Q P. Code: M4201

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

LONG ESSAY **1x10=10**

1. Explain the method and purpose of incorporating proteins tag in expression cloning

SHORT ESSAY **7X5=35**

2. Explain the properties and application of alkaline phosphatase in rDNA technology
3. Explain the attributes of Yeast Artificial Chromosomes.
4. Describe the principle of blue-white screening for the selection of transformants.
5. Explain the principle of recombinant DNA technology
6. Describe the mechanism of action of bevacizumab.
7. Describe the mechanism of action of adalimumab.
8. Explain the classification of stem cells on the basis of potency.

SHORT ANSWERS **5X3=15**

9. Describe the attributes of liposome in gene therapy.
10. Describe the principles of Intellectual Property Rights.
11. Define molecular therapeutics and list its types
12. Give three examples of selection markers
13. Define DNA polymerase and list its types.

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