SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology & Human Genetics
Second Year (Semester-III)
March – 2017 Examination

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

Paper-I

MEDICAL GENETICS

Q.P Code :MBHG-113

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 various types of inheritance patterns and their significance.
2. Why the individuals with reciprocal translocation present with normal phenotype and such individuals produce abnormal offspring?

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

3. Molecular tests for genetic diagnosis.
4. Factors affecting pedigree analysis.
5. Invasive tests for prenatal genetic diagnosis.
6. Ethical and legal issues in genetic counseling.
7. Autosomal trisomies.
8. Chromosome instability syndrome.
9. Array - comparative genomic hybridization.
10. Banding techniques.
11. Newborn screening.
12. ISCN guidelines.

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

13. Polygenic genetic disorder.
14. HER2.
15. Preimplantation genetic diagnosis.
16. Imprinting.
17. Triple X syndrome.
18. Aneuploidy.
19. Patau syndrome.
20. Isochromosome.
21. Fetal DNA in maternal circulation.
22. Pedigree analysis.

* * *

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology & Human Genetics

Second Year (Semester-III)

March – 2017 Examination

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

Paper-II

MOLECULAR BASIS OF HUMAN DISEASES-I

Q.P Code : MBHG-114

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 pathway for synthesis of urea from ammonia. Name conditions in which blood urea level is increased and explain the biochemical basis.
2. Describe the epigenetic changes in carcinogenesis.

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

3. Tumor suppressor genes.
4. Lesch-Nyhan syndrome and Orotic aciduria.
5. How is galactose metabolized? Which enzyme is deficient in classical galactosaemia?
6. What are carcinogens? Name the types of carcinogens.
7. Congenital hypothyroidism.
8. Familial cancers.
9. What are proto oncogenes? Explain their significance.
10. Glycogen storage diseases.
11. Briefly explain the mechanism of action of vincristine and taxol.
12. Beta-Thalassemia.

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

13. Hereditary fructose intolerance.
14. Phenylketonuria.
15. Gaucher's disease.
16. Loss of contact inhibition.
17. Two-hit hypothesis.
18. Retinitis pigmentosa.
19. Tumor angiogenesis.
20. Spinal muscular atrophy.
21. Sickle cell anemia.
22. Familial hypercholesterolemia.

* * *

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology & Human Genetics
Second Year (Semester-III)
March - 2017 Examination

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

Paper-III

BIOSTATISTICS RESEARCH METHODOLOGY

Q.P Code : MBHG-115

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

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

1. Explain the significance of review of literature in research. What are the different sources for reviewing the literature?
2. Explain in detail the statistical methods to compare means of two samples.

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

3. Role of systematic review and meta-analysis in medical research.
4. Techniques of random sampling.
5. Types of data presentation.
6. Importance of Boolean operators and filters in literature search.
7. Define correlation and assessment of strength of correlation.
8. What are the guidelines for good laboratory practice (GLP)?
9. Sample size determination.
10. Declaration of Helsinki.
11. Types of scientific papers.
12. What are the various phases of drug trials?

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

13. What is a cross sectional study.
14. Significance of null hypothesis.
15. PubMed.
16. What is Vancouver style of writing references?
17. What is pilot study?
18. When do you apply chi-square test for analysis of data?
19. Concept of blinding in clinical trials.
20. Student t-test.
21. How do you determine median.
22. What is normal distribution?

* * *