SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

M.Sc. Molecular Biology& Human Genetics
Feruary-2015 Examination
(Semester-I)

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

Paper-I
ANATOMY
Q.P Code : MBHG-101

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 detailed description of the histology of the kidney. Add a note on functions and applied aspects of kidney.
2. Describe the thyroid gland under the following headings.
   a. Location parts and orientation
   b. Relations
   c. Blood supply
   d. Applied anatomy

SHORT ESSAY **10X 5 = 50**

3. Fertilization and its consequences.
4. Cavernous sinus- relations and contents.
5. Waldeyer's ring.
6. Lesser omentum.
7. Bronchopulmonary segments.
8. Illustrate articulated hand.
9. Uterus-location and relations.
10. Quadrants of the abdomen.
11. Pericardium.
12. TS of compact bone.

SHORT NOTES **10 X 3 = 30**

13. Name three branches of the external carotid artery.
14. Name three unique features of the clavicle.
15. Name three actions at the knee joint.
16. Name the ventricles of the brain. Give the location of each.
17. What is a sarcomere.
18. Name three appendages of the skin.
19. Give the surface marking of the transpyloric plane.
20. Name three tributaries of the great Saphenous vein.
21. Name the lymph nodes of the axilla.
22. Barium meal X ray.

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Paper-II

PHYSIOLOGY

Q.P Code : MBHG-103

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 functions of thyroid hormones. Add a note on hypothyroidism.
2. Define and discuss the molecular basis of action protential. What is compound action potential?

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

3. Describe the short term mechanisms that regulate blood pressure.
4. Define and classify synapse. Explain any three properties.
5. Describe the process of erythropoiesis and the factors affecting it.
6. Explain phases of deglutition.
7. Explain the functions saliva.
8. Explain functions of juxta glomerular apparatus.
9. Describe the functions of plasma proteins.
10. Trace the visual pathway.
11. Explain oxygen hemoglobin dissociation curve with the help of diagram and mention the factors influencing it.
12. Explain negative feedback mechanism with suitable example.

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

13. Name three gastro intestinal hormones and mention one function of each.
14. State land steiner's law.
15. List the functions of bile.
16. Define lung compliance.
17. List the functions of cerebrospinal fluid.
18. Name female sex hormones and mention one function of each.
19. List the functions of cell membrane
20. Name primary taste sensations.
21. Name body fluid compartments giving their normal value.
22. Name the mechanisms by which body tolerates cold environment.

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Paper-III

Biochemistry

Q.P Code : MBHG-105

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

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

1. Write the sources, daily requirement, functions and deficiency manifestations of vitamin A.
2. Write the principle, procedure and applications of paper chromatography.

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

3. Phospholipids.
4. Watson and crick model of DNA structure.
5. Secondary structure of proteins with examples.
6. Classify enzymes with one example each.
7. Digestion and absorption of proteins.
8. Specific dynamic action of food substances.
9. Respiratory mechanism of acid base balance.
10. Polyacrylamide gel electrophoresis.
11. Radioactive isotopes and its applications.
12. Chemiosmotic theory of oxidative phosphorylation.

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

13. Beri Beri.
14. Anion gap.
15. Essential amino acids.
16. Biologically important compounds derived from cholesterol.
17. Denaturation of proteins.
18. Name any three disaccharides and write their composition.
19. List out any three functions of vitamin C.
20. Role of bile salts in digestion and absorption of lipids.
21. Write normal values of serum (a) sodium (B) Potassium (c) chloride.
22. Functions of albumin.

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Paper-IV

Microbiology

Q.P Code : MBHG-109

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

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

1. Define and classify antigen and antibody reactions. Discuss in detail about precipitation.
2. Define and classify sterilization. Discuss in detail about moist heat sterilization.

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

3. Bacterial flagella .
4. Cell mediated immunity.
5. Type I hypersensitivity
6. Classical complement pathway.
7. Innate immunity.
8. Bacterial growth curve.
9. Laboratory diagnosis of viral infections.
10. Bacterial toxins.
11. Fluorescent microscope.
12. Bacterial spore.

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

13. Mention three immunodeficiency diseases.
14. Draw a neat labeled diagram of IgG.
15. Gram staining.
16. Mention three methods of antibiotic sensitivity testing.
17. Mention three anaerobic culture methods.
18. Enriched media.
19. Classify viruses with examples.
20. Name three diseases associated with complement deficiencies.
21. Mention methods of reproduction in fungi.
22. Non ionizing radiation.

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