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PG CBCS
M.SC. Semester-IV Examination, 2021
ZOOLOGY
 PAPER: ZOO 403C

Full Marks: 40**Time: 2 Hours****Write the answer for each unit in separate sheet**

The figures in the right-hand margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable.

Group-403C.1**(Marks: 20)****(HUMAN DISEASE & MOLECULAR ANALYSIS)****Answer TWO questions of the following:****2X10=20**

1. Describe the basic principle and procedure Sanger's method of DNA sequencing.
2. Describe the production of sticky ends by homopolymer tailing. Discuss the mechanism of blunt end ligation with a DNA topoisomerase. What do you mean T_m value? 4+4+2
3. Write the molecular and biochemical basis of Thalassemia in human.
4. a. Describe the cloning strategy of a eukaryotic gene in BAC vector.
 b. Write a note on Western blotting 5+5

Group-403C.2**(Marks: 20)****(APPLIED GENETICS)****Answer TWO questions of the following:****2X10=20**

1. a. How coding joints and signal joints are created in V (D)J recombination ?
 b. What are the two conserved sequences in light-chain and heavy-chain DNA function as recombination signal sequences (RSSs)? 6+4
2. a. Differentiate Secreted μ and Membrane μ of TCR.(T cell Recombination).
 b. Give details of differential expression of membrane forms of μ m mRNA and δ m mRNA heavy chains of BCR regulated by alternative RNA processing. 4+(3+3)

(P.T.O.)

(2)

3. Is there a genetic test for Huntington's disease? What gene is responsible for Huntington's disease? Discuss the molecular diagnosis of Huntington's disease by RFLP. 2+2+6
4. What is immunoglobulin gene rearrangement? What different process contributes in diversification of immunoglobulins? How many immunoglobulin genes are there? 3+5+2
