**ST. JOSEPH’S UNIVERSITY, BENGALURU -27**

**M.Sc (ZOOLOGY) – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2023**

**(Examination conducted in May 2023)**

**ZO8322 – MOLECULAR BIOLOGY AND IMMUNOLOGY**

**Time: 2 Hours Max Marks: 50**

**This paper contains two printed pages and four parts**

**Note: Draw diagrams wherever necessary**

**Part - A**

**I. Answer the following. 5X1=5**

1. \_\_\_\_\_\_\_\_\_\_ enzyme unwinds the DNA at replication fork.
2. T cell receptors recognize only antigen that is combined with \_\_\_\_\_\_\_\_\_\_\_\_ molecules.
3. \_\_\_\_\_\_\_\_\_\_\_ are the cytokines released in response to viral infection.
4. The immune system, produces \_\_\_\_\_\_\_\_\_\_\_\_\_ responses best suited for elimination of exogenous antigens.
5. A-form of DNA has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_conformation of the ribose sugar.

**Part - B**

**II. Answer the following questions. 5X2=10**

1. Draw the structure of eukaryotic mRNA.
2. Define Vaccine and mention its types.
3. Mention the characteristics of Genetic Code
4. Classify Hypersensitivity based on their type of reaction.

**10.** What are molecular chaperons?

**Part - C**

**III. Answer any Three of the following questions. 3X5=15**

1. Differentiate between MHC class -I and II molecules.

**12.** Write a note on biochemical pathways of complement system.

**13.** Write the polypeptide translated from the below DNA stretch

**14.** Briefly explain Immunotherapy and its types in cancer treatment.

**Part – D**

**IV. Answer any Two of the following questions. 2X10=20**

**15.** Elucidate the mechanism of mismatch DNA repair with a neat labelled diagram.

**16.** write a note on mechanism of T-cell proliferation.

**17.** Explain the mechanism of prokaryotic translation with a neat labelled diagram.