5. (a) What are the different attributes of adaptive immunity? Discuss in detail

(b) Discuss the different factors of an immunogen which influence its immunogenicity.

(c) What is self MHC restriction? Discuss various steps involved in the development and maturation of T cells. (6,6,6)

6. (a) What are immunity boosters and immunomodulators? Discuss their role in improving immunity giving any two examples.

(b) Discuss the role of probiotics and gut microbiota in the regulation of health and immunity.

(c) What are our traditional practices? Discuss briefly how yogic life style and meditation helps in improving health and maintain homeostatis. 6,6,6)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4621 **J**

Unique Paper Code : 3184002002

Name of the Paper : Health and Body Defense System (GE)

Name of the Course : **B.Sc. (H) Biomedical Science (NEP-UGCF-2022)**

Semester : III/IV

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. **Question No. 1** is compulsory.
4. Give illustrations and examples wherever required
5. Subparts of the questions should be attempted together.

1. (a) Give a brief account on the following (Any three):

(i) Prokaryotic cell

(ii) Virus

(iii) Contribution of Sir Edward Jenner in vaccine development

(iv) Neutrophil (3x3=9)

(b) Differentiate between (Any three)

(i) Sandwich ELISA and ELISPOT

(ii) Receptor and non-receptor mediated endocytosis

(iii) T lymphocyte and B lymphocyte

(iv) Primary and secondary immune response (3 x 3 = 9)

2. (a) Write short note (Any four)

(i) Physical barrier

(ii) Lymph node

(iii) Transfusion reaction

(iv) Lateral flow assay

(v) Bacterial defense against bacteriophage (4 x3 = 12)

(b) Discuss the basics of immunofluorescence microscopy and give an example of a notable application of this technique. (6)

3. (a) Define health. Discuss the various requirements of a healthy body according to age and gender.

(b) What is complement system? Discuss how a pathogenic microorganism induces the activation of classical complement pathway in detail.

(c) What are primary lymphoid organs? Discuss their functions in detail. (6,6,6)

4. Give a schematic representation and brief explanation of the following

(a) Phagocytosis

(b) IgM antibody

(c) Inflammation (6,6,6)