

B.Sc. 4th Semester (Honours) Examination, 2021
Subject: ZOOLOGY

Course ID: 42613 Course Code : SH/ZOO/403/C-10
Course title: Immunology
Full Marks-25 Time: 2hrs.

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

UNIT- I

1. Answer any five of the following questions. 1x5=10

- a) Variolation for resistance against certain viral infection, initiated in China in 1700 and vaccination was started by Edward Jenner in England in 1798. What were the basic components for variolation and vaccination and what were the diseases prevented by these procedures?
- b) Skin, cornea and mucosa of the respiratory, gastrointestinal and genito-urinary tracts are called body's first line of defence- justify the statement.
- c) What do you mean by hybridoma cell ?
- d) The immune system keeps a record of every pathogen ever defeated and thereby can recognize and destroy the pathogen quickly on a second exposure--- What is the basis?
- e) What do you mean by plasma therapy?
- f) What do you mean by Pathogen Associated Molecular Patterns (PAMPs)? What are the receptors for PAMPs?
- g) Indigenous covid vaccine , named covaxin manufactured at BharatBiotech Ltd. and another called covishield produced by Sriram Institute of India Ltd(SIIL) ,being used in INDIA and in many other countries of the world. What are the basic Components of these vaccines.
- h) Direct inspiration of corona virus aerosol or droplets from sneezing and coughing are the principal source for transmission with higher viral load causing disease to the recipients. In case of touching there is no serious

threat for transmission. In other way it may be said “touching no problem, breathing big problem. “ Justify the science behind.

UNIT- II

2. Answer any two from the following.

5x2=10

- i) All immunogenic substances are antigenic however not all antigenic substances are immunogenic –explain in brief with example. (3+2)
- ii) Distinguish between immunogens and haptens with suitable example. Define adjuvant and write down the immunological functions of adjuvant. (2+1+1+1)
- iii) Write the full forms of GALT and BALT. How monoclonal antibody differs from polyclonal antibody? State the function of IgA. 2+2+1
- iv) Differentiate between Major Histocompatibility Complex(MHC) and MHC molecules. Describe the role of MHC molecules in adaptive immune system. (2+3)

UNIT- III

3. Answer any one of the following questions.

1x10

- A. What do you mean by cytokines? It is observed during second wave of covid19 that cytokine storm damages the patient’s lung tissue aggressively due to hyperactive immune response . What is the mechanism by which immune cells develop hyper-activation ? How does the phenomenon controlled with specific medicines? What are the negative impacts by using these medicines? (1+4+2+3)
- B. Define Complement system. Discuss the classical pathway of complement activation .Write the biological functions of complement system. 2+6+2