(Pages : 3) **N – 7988**

Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, August 2022

Career Related First Degree Programme under CBCSS

Group 2(a) Botany and Biotechnology

BB 1472 : IMMUNOLOGY

(2015 – 2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in **one** or **two** sentences. Each question carries **1** mark.

1. Who first discovered antibodies?
2. Name any two organs of the immune system.
3. Which immune provides the first line of defense against invading pathogen?
4. How man polypeptide chains do antibodies have?
5. What does Rh factor mean?
6. Define an epitope.
7. Expand AIDS.
8. Name an autoimmune disease that affects the thyroid gland.
9. Name the inactivated vaccine used in India against COVID 19.
10. Which cells are responsible for humoral immunity?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions. Each question carries **2** marks. (Answer not to exceed one paragraph)

11. What are hematopoietic stem cells?

12. Name any two cells of immune system.

13. What are haptens?

14. State the difference between paratope and epitope.

15. What is the basis of ABO blood grouping system?

16. What are MHCs?

17. What is phagocytosis?

18. Define a toxoid.

19. What are the three major types of antigens?

20. How the monoclonal antibodies are produced?

21. Define autoimmunity.

22. What is the basic principle of ELISA?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks. (Answer not to exceed **120** words)

23. Write a note on important discoveries that led to the advent of modern immunology.

24. Explain the important differences between innate and acquired immunity.

25. Differentiate between allotypic and idiotypic determinants.

26. What is the role of vaccines in eradicating and controlling diseases? Explain with examples.

27. Explain the differences between humoral and cell-mediated immunity.

28. What are the five different types of antibodies? How they are different.

29. What is immuno electrophoresis? Write a note on its applications.

30. Explain hybridoma technology.

31. Write a note on ABO blood grouping system and Rh incompatibility.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **three** pages)

32. With the help of diagrams, explain the structure of an antibody molecule. Elaborate on its functions.

33. Elaborate on the various antigen-antibody reactions and its applications in diagnosis and treatment of diseases.

34. Write detailed notes on the following

    (a) Genetic basis of antibody diversity.

    (b) Clonal proliferation theory of antibody production.

35. How someone can develop an autoimmune disease? Elaborate on any three common autoimmune diseases.

(2 × 15 = 30 Marks)
