DEPARTMENT OF BIOTECHNOLOGY
V SEMESTER [THIRD YEAR]

Immunology and Immunotechnology

GATE FAQs – Immunology

1. What is immunity?

2. Differentiate innate and adaptive immunity.

3. List the components of innate immunity.

4. What are PAMPs and PRRs?

5. What is the role of Toll-like receptors?

6. Differentiate humoral and cell-mediated immunity.

7. Which cells mediate humoral immunity?

8. Which cells are involved in cell-mediated immunity?

9. What is clonal selection theory?

10. Define antigenicity and immunogenicity.

11. What factors influence immunogenicity?

12. Define epitope and paratope.

13. What is a hapten? Give example.

14. What are superantigens?

15. Structure of immunoglobulin molecule?

16. Name the five classes of immunoglobulins.

17. Structure and function of IgG.

18. Role of IgM in primary response.

19. What is secretory IgA?

20. What is the function of IgE?

21. Difference between monoclonal and polyclonal antibodies?

22. What are primary lymphoid organs?
23. What are secondary lymphoid organs?
24. What is hematopoiesis?
25. Differentiate B cells and T cells.
26. What is Major Histocompatibility Complex (MHC)?
27. Difference between MHC Class I and Class II.
28. Which cells express MHC I?
29. Which cells express MHC II?
30. What is antigen processing?
31. Explain endogenous antigen pathway.
32. Explain exogenous antigen pathway.
33. Role of proteasome in antigen processing?
34. What is TAP protein?
35. What is cross-presentation?
36. What is antibody gene rearrangement?
37. What are V, D, J gene segments?
38. What is somatic hypermutation?
39. What is class switching?
40. What is affinity maturation?
41. What is hybridoma technology?
42. Who developed hybridoma technology?
43. What is complement system?
44. Name three complement pathways.
45. What is membrane attack complex (MAC)?
46. What is opsonization?
47. What is C3 convertase?
48. Types of antigen-antibody reactions?

49. What is prozone phenomenon?
50. What is precipitation reaction?
51. Define primary and secondary immune response.
52. What is immune tolerance?
53. Central vs peripheral tolerance?
54. What is clonal deletion?
55. What is anergy?
56. Define hypersensitivity.
57. List four types of hypersensitivity.
58. Mechanism of Type I hypersensitivity.
59. What is Arthus reaction?
60. Mechanism of Type III hypersensitivity.
61. What is delayed-type hypersensitivity?
62. Define autoimmunity.
63. What is molecular mimicry?
64. What is systemic lupus erythematosus?
65. What is transplantation immunity?
66. What is graft versus host disease?
67. Types of grafts.
68. What is immunodeficiency?
69. Difference between primary and secondary immunodeficiency.
70. What is SCID?
71. What is HIV-induced immunodeficiency?
72. What are immunoproliferative disorders?
73. What is lymphoma?
74. Approaches to correct immune dysfunction?
75. What are immunosuppressive drugs?

76. What is a vaccine?
77. Types of vaccines.
78. Difference between live attenuated and killed vaccines.
79. What is subunit vaccine?
80. What is conjugate vaccine?
81. What is DNA vaccine?
82. What are recombinant vaccines?
83. What are adjuvants?
84. What is herd immunity?
85. What are peptide vaccines?
86. What are viral vector vaccines?
87. What are second-generation antibodies?
88. What are humanized antibodies?
89. What are chimeric antibodies?
90. What are lymphokines?
91. What is cytokine therapy?
92. Principle of immunodiffusion.
93. What is radial immunodiffusion?
94. Principle of immunoprecipitation.
95. What is agglutination reaction?
96. Types of ELISA.
97. Difference between direct and indirect ELISA.
98. What is sandwich ELISA?
99. What is competitive ELISA?
100. Applications of ELISA in diagnosis.