EXAM TOPICS FOR THE ORAL EXAM IN 2025/2026

1. The definition of immunity and antigen, the functions and basic principles of the immune system.
2. The structure and the function of the lymphoid organs and tissues.
3. The concept, characteristics and tasks of innate immunity.
4. The pattern recognition receptors and the humoral elements of innate immunity.
5. Cellular elements of innate immunity.
6. Members, activation and tasks of the complement system.
7. Inflammation and acute phase response.
8. The production and functions of inflammatory cytokines.
9. Characteristics of adaptive immunity.
10. The organization of the MHC; the structures and functions of the proteins it encodes.
11. Antigen processing and presentation.
12. Early development of T and B lymphocytes.
13. Antigen recognition of T lymphocytes, the process of T lymphocyte activation.
14. Subtypes of helper T cells and their functions.
15. The formation of regulatory T cells and their functions.
16. Characteristics and functions of cytotoxic T cells.
17. Subtypes of B lymphocytes.
18. The T cell dependent and independent activation of B lymphocytes.
19. Processes in the germinal center.
20. Structure, isotypes, effector functions of antibodies.
21. Development of immunological memory.
22. Vaccination, active and passive immunization.
23. Kinetics of immune responses against pathogens. Immune effector modules.
24. Immune responses against intracellular pathogens (viruses and bacteria) and their immune evasion.
25. Immune responses against extracellular pathogens and parasites and their immune evasion.
26. The concept and development of immunological tolerance. Processes of central and peripheral tolerance.
27. Development of autoimmune diseases, organ-specific and systemic autoimmune diseases.
28. Tumor immunology, tumor antigens and the immune response against them.
29. Immunotherapies in the treatment of tumors.
30. Characteristics, mediators, therapies of type I hypersensitivity (allergic) reaction.
31. The mechanisms and examples of hypersensitivity reactions of type II. Autoimmune diseases of type II. hypersensitivity with and without tissue damage.
32. The mechanisms and examples of hypersensitivity reactions of type III. and IV. Describe the pathomechanism of type III and type IV. hypersensitivity reactions based on examples.
33. Immunological concepts in transplantations, rejection reactions and therapeutic options.
34. Immune privilege, immunology of the mother-fetus relationship.
35. Theoretical background and application of basic immunological methods.