

Portal:Exam Topics in Biology and Medical Genetics (1. LF, D)

1. Exam Topic 1
 - Genotype and its variability, mutation, recombination
 - Genetic control of antibody production
 - Prevention and early diagnostics of inherited diseases
2. Exam Topic 2
 - Genotype and environment
 - Mitosis, its regulation and defects
 - The inheritance and biological importance of blood group systems
3. Exam Topic 3
 - Methods of genetic analysis in experimental and human genetics
 - Structure and reproduction of bacteria, importance for medicine
 - The inheritance and biological importance of Rh system
4. Exam Topic 4
 - Fundamental laws of genetics, Mendel's experiments
 - Cell cycle, its regulation and defects
 - Human major histocompatibility complex
5. Exam Topic 5
 - Genealogical method
 - DNA structure and function
 - Immunocompetent cells
6. Exam Topic 6
 - Autosomal dominant inheritance in experiment and pedigrees, examples of human traits
 - RNA types, structure and function
 - Genetic control of immune response
7. Exam Topic 7
 - Autosomal recessive inheritance in experiment and pedigrees, examples of human traits
 - Gene structure and function
 - Transplantation rules
8. Exam Topic 8
 - Gonosomal inheritance in experiment and pedigrees, examples of human traits
 - DNA replication
 - Detection and prevention of inherited chromosomal aberrations
9. Exam Topic 9
 - Multifactorial inheritance
 - Genetic code
 - Indication of chromosomal analysis
10. Exam Topic 10
 - Human traits with multifactorial inheritance
 - Protein-coding and non-coding DNA sequences
 - Genetics of transplantations, transplantation rules, histocompatibility systems
11. Exam Topic 11
 - Heritability and significance of its assessment in medicine
 - Translation, post-translational protein modifications
 - Syndromes of autosomal aneuploidies
12. Exam Topic 12
 - Dihybridism, interaction of non-allelic genes, polyhybridism
 - Transcription and post-transcriptional modifications of RNA in Eukaryotes
 - Environmental mutagenic and teratogenic factors
13. Exam Topic 13
 - Multiple alleles
 - Genetics of aging and death
 - Aims and mission of medical genetics
14. Exam topic 14
 - Genetic linkage
 - Regulation of gene function in Prokaryotes
 - Preconception prevention of heritable diseases
15. Exam Topic 15
 - Genetic methods of linkage analysis
 - Gene mutation, types and manifestation
 - Tumorigenesis, cancerogenesis, cancerogens
16. Exam Topic 16
 - Crossing-over, its mechanism and importance
 - Regulation of gene function in Eukaryotes
 - Screening of heritable diseases
17. Exam Topic 17
 - Molecular basis of heritable disease
 - Somatic and gametic (germline) chromosomal aberrations

- Genetic counseling and its importance
18. Exam Topic 18
 - Epigenetics, "thrifty" genotype and "thrifty" phenotype
 - Mutagens a mutagenesis, testing of mutagenicity
 - Characteristics of cancer development
 19. Exam Topic 19
 - Extrachromosomal inheritance, non-Mendelian inheritance
 - Reparation mechanisms of nucleic acids
 - Ethical and legal aspects of medical genetics
 20. Exam Topic 20
 - The importance and structure of Eukaryotic chromosomes
 - The Inborn Errors of Metabolism
 - Population genetics, C-H-W equilibrium
 21. Exam Topic 21
 - Population polymorphisms and their causes
 - Methods of nucleic acids analysis
 - Chromosomal aberrations in etiology of neoplasia
 22. Exam Topic 22
 - Inbreeding, consanguineous marriage and its risks
 - Chromosome number and structure, techniques of examination
 - Ontogenesis of sex in mammals and its defects
 23. Exam Topic 23
 - Prenatal diagnostics of inherited disease
 - Transcription and post-transcriptional modifications of RNA in Prokaryotes
 - Teratogenesis, teratogens
 24. Exam Topic 24
 - Small populations, genetic drift, importance for evolution
 - Hemoglobinopathies
 - Inherited diseases of development in man, examples, partition according to causes
 25. Exam Topic 25
 - Meiosis, its regulation and defects
 - Conjugation, transformation, transduction
 - Reparation mechanisms of the organism and their genetic control
 26. Exam Topic 26
 - Gametogenesis
 - Direct and indirect diagnostics of heritable diseases by nucleic acid analysis
 - Causes of chromosomal aberration
 27. Exam Topic 27
 - Genealogical methods
 - The importance and structure of chromosomes of Prokaryotes
 - Prenatal diagnostics of inherited disease
 28. Exam Topic 28
 - Human karyotype, methods of its examination
 - Structure and function of Eukaryotic cell
 - Characteristics of cancer cells
 29. Exam Topic 29
 - Aberrations of chromosome number, their causes and clinical presentation
 - Cell signaling pathways
 - Familial tumors
 30. Exam Topic 30
 - Syndromes of gonosome aneuploidies
 - Tumor-suppressor genes
 - Structure and function of Prokaryotes
 31. Exam Topic 31
 - Aberrations affecting chromosome structure
 - Protooncogenes, oncogenes
 - Cultivation of cells and tissues in vitro, importance in medicine
 32. Exam Topic 32
 - Chromosomal sex determination
 - Genetic regulation in multicellular organisms
 - Prenatal screening of inherited disease