

**TOPICS FOR EXAM**  
**Position 4, PROFESSOR, genetic discipline**

1. Introduction in Genetics (Human genetics in perspective, heredity and environment)
2. Genotype and Phenotype
3. Cellular division and the genetic continuity. Gametogenesis and fertilization
4. Number and structure of the chromosomes. Sex chromatin and inactivation of X chromosome
5. Numerical and structural chromosomal anomalies
6. Sex determination and differentiation
7. Mendel's Laws
8. Mendelian inheritance
9. Criteria of mendelian inheritance: autozomal-dominant and recessive, X-linked dominant and recessive, Y-linked
10. Polygenic and multifactorial inheritance
11. The Hardy-Weinberg Equilibrium. Gene frequencies and the mode of inheritance. Mutation. Selection. Migration. Inbreeding. Evolution of human population.
12. Introduction in molecular genetics. DNA structure. Gene structure. Human Genome. DNA Diagnosis
13. Definition and classification of genetic diseases.
14. Genetic counselling.

**REFERENCES:**

1. Marius Bembea, Genetică Medicală și Clinică, Editura Universității din Oradea, 2001
2. Marius Bembea, Genetica în pediatrie, Editura Risoprint, 2016
3. Mircea Covic, Dragoș Ștefănescu, Ionel Sandovici, Eusebiu Vlad Gorduza, Genetică Medicală, Editura Polirom, 2017.

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