**FINAL CONTROL QUESTIONS FOR ORGANIC CHEMISTRY 2**

1. Diazo- and azo compounds: Classification, structure, isomerism, nomenclature. Physical properties.
2. Diazo- and azo compounds: Dependence of structure on physical properties. Sources, methods of obtaining in the laboratory and industry.
3. Diazo- and azo compounds: Grice method. Chemical transformations, azo addition reactions.
4. Azo dyes: Concept of azo dyes. Chromophore and auxochrome groups. Qualitative reactions. Materials based on diazonium salts. Natural and synthetic dyes.
5. Sulfur-containing organic compounds. Sulfonic acids and their derivatives: Classification, structure, isomerism, nomenclature.
6. Sulfur-containing organic compounds. Physical properties. Dependence of structure on physical properties.
7. Sources of organic acids, methods of obtaining in the laboratory and industry. Sulfonation of arenes.
8. Structure of organometallic compounds. Nomenclature. General methods of synthesis. General reactions characteristic of organometallic compounds.
9. Biological properties of organometallic compounds.
10. Oxyacids: Classification, structure, isomerism, nomenclature. Physical properties.
11. Oxyacids: Methods of preparation. Chemical transformations.
12. Amino acids. Classification, structure, isomerism, nomenclature.
13. Amino acids. Physical properties. Methods of production. Chemical transformations.
14. Five-membered heterocyclic rings Five-membered heterocyclic rings: Classification, structure, isomerism, nomenclature.
15. Heteroatom. Aromaticity. Physical properties. Relationship of structure to physical properties.
16. Heteroatom. Sources, general and specific methods of preparation in the laboratory and industry.
17. Six-membered heterocyclic rings Six-membered heterocyclic rings: Structure, isomerism.
18. Six-membered Physical properties. Sources, general and specific methods of preparation in the laboratory and industry. Bayer-Chichibabin reaction. Chemical transformations. Qualitative reactions.
19. Fused ring heterocyclic compounds: Structure, isomerism. Physical properties. General and specific methods of preparation. Chemical properties. Quinoline-based products.
20. Carbohydrates. Classification, structure, isomerism, nomenclature.
21. Monosaccharides: Pentoses and hexoses. Aldoses and ketoses. Reactions proving the structure of monoses.
22. Open and closed chain forms of glucose and fructose. Glucoside hydroxyl.
23. Methods of obtaining monosaccharides. Chemical properties.
24. Carbohydrates. Classification, structure, isomerism, nomenclature. Monosaccharides:
25. Pentoses and hexoses. Aldoses and ketoses. Reactions proving the structure of monoses.
26. Open and closed chain forms of glucose and fructose. Glucoside hydroxyl. Methods of obtaining monosaccharides. Chemical properties.
27. Polysaccharides: Maltose, cellobiose, lactose (milk sugar), sucrose. Non-sugar polysaccharides.
28. Cellulose and starch. Elementary unit structure. Cellulose acetates, nitrocellulose, their uses, celluloid.
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