

Topic 1.

INTRODUCTION TO MEDICAL CHEMISTRY: STRUCTURE OF ATOMS AND BOND CHARACTERISTICS

Theoretical QUESTIONS for preparation:

1. What is Medical Chemistry?
2. Structure of atoms
3. Hybrid orbitals
4. Chemical bonds
 - a. " σ " and " π " overlapping of orbitals
 - b. Delocalized bonding
5. Bond characteristics

Study questions and tasks

1. What is Medical Chemistry? _____

2. What are the main chemical elements of living organisms?

3. What is a valence?

4. Where are valence electrons situated?

5. What is the valence for: carbon (C) ____, oxygen (O) ____, hydrogen (H) ____, phosphorus (P) ____, nitrogen (N) ____ ?

6. What is a chemical bond?

7. Draw the structure of a single bond, a double bond, and a triple bond

8. Write down order numbers, atomic formulas of the elements and underline their valence electrons:

H	order number	____	atomic formula	_____
O	order number	____	atomic formula	_____
C	order number	____	atomic formula	_____
N	order number	____	atomic formula	_____
P	order number	____	atomic formula	_____
S	order number	____	atomic formula	_____

8. What is hybridization of orbitals?

9. Draw the scheme of sp^3 hybridization, give an example

10. Draw the scheme of sp^2 hybridization, give an example

11. Draw the scheme of sp hybridization, give an example

12. Give a definition to:

Bond polarity	
Bond energy	
Bond length	