**Organic Molecules.**

**Homework Task: Answer the following questions. Write your answers (on your notebook) and submit to your instructor.**

1. **Write definition of the following terms.**

Active site dehydration synthesis hydrolysis polypeptide

Amino acid dipeptide inorganic compound Mono

Amino group disaccharide lipid protein

Carbohydrate DNA monosaccharide RNA

Carboxyl group enzyme nucleic acid saturated fat

Catalyst fatty acid organic compound starch

Cholesterol glycerol peptide bond substrate

Coenzyme glycogen polymer unsaturated fat

1. **Answer the following questions.**
2. What element is always found in organic compounds?
3. What three element are usually found in organic compounds?
4. How many covalent bonds can a carbon atom form?
5. Name four type of organic compound.
6. Why are sugars biologically important?
7. How are two simple sugar molecules bonded together?
8. Define the term polymer.
9. How are complex sugar molecules broken apart?
10. What important group is found at the end of the fatty acid molecule?
11. List the element found in proteins.
12. What groups are found in each amino acid?
13. Name two types of nucleic acids.
14. Which nucleic acid occurs as a double helix?
15. What are enzymes?
16. Name the theory of enzyme action.

**11.** What is the proportion of hydrogen to oxy-gen in carbohydrate molecules?

**12.** What is the empirical formula for monosac-charide?

**13.** Describe dehydration synthesis.

**14.** What type of compound is formed when two monosaccharaides are joined by dehydration synthesis?

 **15.** Explain the difference between a saturated and an unsaturated fatty acid.

 **16.** List several function of lipids in living or-ganism.

 **17.** List several function of proteins in living organisms.

**18.** Show the basic structure of an amino acid.

**19**. Describethe formation of a peptide bod.

**20.** What are the functions of the nucleic acids?

**21.** Describe the general structure of each type of nucleic acid.

**22.** How are most enzymes named?

**23.** Explain the lock-and-key model of enzyme action.

**24.** Describe how enzyme action is affected by the following: temperature, PH, enzyme concentration, and substrate concentration.

**25.** What are biomolecules?

**26.** What is a nucleoside?

**27.** How a nucleotide is formed?

**28. P**roteins, nucleic acids, polysaccharides and lipids are called biomacromolecules. Why?

**29.** Which are the building blocks of proteins?

**30.** How many types of amino acids are present in a protein?

**31. Which are the building blocks of polysaccharides?**

**32** Name the polysaccharide form the exoskeleton of Arthropods.

**33.** which are the buildings blocks of nucleic acids?

**34.** Name the pentose sugar present in DNA.

**35.** Name the pentose sugar present in RNA.

**36.** By which bond the amino acids are linked in a protein.

**37.** What is anabolism?

**38.** What is catabolism?

**39.** Which is the energy currency in the living cell?

**40.** Differentiate oils from fats.

**41.** List nitrogen bases of DNA.