DATE: NAME: CLASS:

CHAPTER 1 HANDOUT	Summary: Biologically Important Molecules	BLM 1-3

Carbohydrates			
Type	**Structure**	**Examples**	**Some Functions**
Monosaccharide	• Contains a single three- to seven-carbon atom-based structure	Glucose, fructose, galactose	• Glucose is used as a primary energy source
Disaccharide	• Contains two monosaccharides joined by a glycosidic linkage	Sucrose, lactose, maltose	• Sucrose and lactose are dietary sugars that are used for energy
Polysaccharide	• Contains many monosaccharides joined by glycosidic linkages	Starch, glycogen, cellulose	• Glycogen is a form of storing glucose in animals • Cellulose provides structural support in plants
Lipids			
Type	**Structure**	**Examples**	**Some Functions**
Triglyceride	• Contains three fatty acids joined to glycerol by ester linkages	Lard, butter, vegetable oils	• Provides long-term energy storage • Acts to cushion organs and insulate from heat loss
Phospholipid	• Contains two fatty acids and a phosphate group joined to glycerol	Phosphatidylcholine	• Forms the main structure of cell membranes
Steroid	• Contains four carbon-based rings attached to one another	Cholesterol, testosterone, estrogen	• Cholesterol is part of cell membranes • Testosterone and estrogen are sex hormones
Wax	• Contains long carbon-based chains	Earwax, beeswax, spermaceti	• A variety of functions, including protection
Protein			
Type	**Structure**	**Examples**	**Some Functions**
Catalyst	• Contains amino acid monomers joined by peptide bonds • All have primary, secondary, tertiary structure	Amylase, sucrase	• Speeds up chemical reactions
Transport		Hemoglobin, ion channel proteins	• Transports specific substances
Structural		Collagen, keratin	• Provides structure
Movement		Myosin, actin	• Enables movement
Regulatory		Hormones, neurotransmitters	• Carries cellular messages
Defence		Antibodies	• Fights infection
Nucleic Acids			
Type	**Structure**	**Some Functions**	
DNA	• Contains deoxyribonucleotide monomers (A, G, T, C)	Stores genetic information of an organism	
RNA	• Contains ribonucleotide monomers (A, U, G, C)	Participates in protein synthesis	

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