

Exam 3 Video Tutorials with Recommended Homework  
from Essentials of General, Organic and Biochemistry by Guinn and Brewer 1<sup>st</sup> Edition

Introduction to Proteins, Carbohydrates, Lipids and Bioenergetics

Proteins and Enzymes Part 1: Amino Acids (Ch 11: 1 a-f, 2, 3, 4, 5, 6, 57)  
Proteins and Enzymes Part 2: Chirality and Amino Acids (Ch 11: 7, 8, 9, 10)  
Proteins and Enzymes Part 3: Overview of Protein Structure (Ch 11: 16, 27 a-f, 30, 31, 32)  
Proteins and Enzymes Part 4: The Primary Structure of Proteins (Ch 11: 11 a-f, 69 a-d)  
Proteins and Enzymes Part 5: Secondary Structure of Proteins (Ch 11: 19 a-d)  
Proteins and Enzymes Part 6: Tertiary Structure of Proteins (Ch 11: 21, 23 a-d, 24 a-d)  
Proteins and Enzymes Part 7: Quaternary Structure of Proteins (Ch 11: 25 a-e, 26, 28, 29)  
Proteins and Enzymes Part 8: Introduction to Enzymes (Ch 11: 34, 35 a-e, 36, 37, 38 a-b, 39)  
Proteins and Enzymes Part 9: Enzyme Inhibition (Ch 11: 43, 44)  
Proteins and Enzymes Part 10: Enzyme Classification & Reaction Catalysts (Refer to Enzyme Wksp in Lab)  
Proteins and Enzymes Part 11: Enzyme Cofactors (Ch 11: 40)

Carbohydrates Part 1: introduction and Monosaccharides (Ch 12: 1 a-h, 2 a-c, 3 a-c, 4)  
Carbohydrates Part 2: Stereochemistry of Monosaccharides  
Carbohydrates Part 3: Disaccharides and Glycosidic Bonds (Ch 12: 5 a-d, 6 a-e, 7, 8 a-b, 47)  
Carbohydrates Part 4: Polysaccharides (Ch 12: 9 a-g, 10, 11, 12, 13)  
Carbohydrates Part 5: Catabolism – Hydrolysis and Glycolysis (Ch 12: 14 to 17, 18 a-e, 19 to 25)  
Carbohydrates Part 6: Other Metabolic Roles of Glucose & Ketone Bodies (Ch 12: 27, 28, 29, 30 a-d)

Lipids Part 1: Fatty Acids, Fats, and Oils (Ch 13: 1 a-b, 2 a-d, 3, 4, 5, 6 a-c, 7, 8, 9, 12)  
Lipids Part 2: Membrane Lipids (Ch 13: 13 a-f, 14, 15, 17)  
Lipids Part 3: Transport across Cell Membranes  
Lipids Part 4: Cholesterol (Ch 13: 30, 31, 32 a-f)  
Lipids Part 5: Eicosanoids (Ch 13: 90, 92, 96)  
Lipids Part 6: Bile Salts and Lipoproteins (Ch 13: 19, 20, 21, 22, 23, 24 a-c, 25)  
Lipids Part 7: Fat Catabolism (Ch 13: 18, 26, 27, 28, 29)

Metabolism and Bioenergetics Part 1: Intro and Acetyl CoA  
Metabolism and Bioenergetics Part 2: The Citric Acid Cycle (Ch 14: 1 a-d, 2 - 8)  
Metabolism and Bioenergetics Part 3: Electron Transport Chain and Oxid Phosphorylation (Ch 14: 9 - 14, 16)  
Metabolism and Bioenergetics Part 4: Reduced Coenzymes and ATP (Ch 14: 15)  
Metabolism and Bioenergetics Part 5: Reaction Energies (Ch 14: 20, 21, 22 a-c)

Nucleic Acids Part 1: Intro and Nucleotides (Ch 15: 1 a-c, 2 a-g, 3, 4, 5 a-d, 6, 7, 8 a-c)  
Nucleic Acids Part 2: DNA (Ch 15: 9 a-b, 10 a-d, 11 - 17)  
Nucleic Acids Part 3: RNA and Protein Synthesis (Ch 15: 8-22, 23 a-b, 24 a-b, 25 a-b, 26, 27)  
Nucleic Acids Part 4: Genetic Mutations (Ch 15: 28 a-d)

Nuclear Chemistry Part 1: Nuclear Structure Review and Intro to Nuclear Chemistry (Ch 16: 1)  
Nuclear Chemistry Part 2: Nuclear Reactions (Ch 16: 2 a-c, 3 - 7, 8 a-d, 9 - 16, 17 a-c)  
Nuclear Chemistry Part 3: Half Lives (Ch 16: 18, 19 a-b, 20)  
Nuclear Chemistry Part 4: Biological Effects of Ionizing Radiation (Ch 16: 23 a-e, 24 - 27, 29-35)  
Nuclear Chemistry Part 5: Nuclear Medicine (Ch 16: 89-92)  
Nuclear Chemistry Part 6: Fusion vs Fission