# Review for Exam #2 - Nutrition

## Ch. 6 Digestion, Absorption and Metabolism

Define the terms digestion, absorption and metabolism. What are the organs of the digestive system? What is the function of each? Where is each found in the body? Which organs are part of the gastrointestinal tract? Which are glands? What is a gland? List all the functions of the liver and pancreas.
What is peristalsis? What is heartburn? Where does digestion of each major class of nutrient occur? Where does absorption occur? How does the stomach work? What is in the stomach?
How does the small intestine work? What are the parts of the intestine? What are villi, and what is their function? What are microvilli, and what is their function? What is secreted by the pancreas? What is secreted by the liver and/or gallbladder? What is the function of each of these secretions?
What is the function of the large intestine? What does it absorb?
Where are each of the different macronutrients (Protein, carbohydrates, lipids) digested and absorbed? How? What is bile? What are chylomicrons?

What is metabolism? What is energy? What is ATP? What are the different steps in metabolism? What is the advantage of using glycolysis? What is the advantage of the Krebs Cycle? How are each of the different macronutrients metabolized? What are acetyl-CoA and Pyruvate? Why do we need oxygen? How do we build and store each of the different macronutrients?

What is Beta-Oxidation? What is gluconeogenesis? Why do we need carbohydrates in our diet? What are ketones? What is ketosis, and how is it related to starvation and diabetes?

## Ch. 8

What is water? What is chemically special about water? What is salt? What are electrolytes? What is a solution? What is an acid? What is a base? What is diffusion? What is osmosis? What are the paths of water loss in the body? What happens if you drop a human cell in a glass of pure water? What happens if you drop a human cell in a glass of very salty water? very pure water? What are the dangers of dehydration? What role do kidneys play in water/salt balance? What is in urine? What are the roles of the different electrolytes in our diet? How is water balance related to hypertension? How is water balance related to the nervous system? What is good and bad about sports drinks?

## Ch. 9 & 10

What are vitamins and minerals? What is the function (or functions) of each of the vitamins? minerals? How is each vitamin absorbed? What about vitamin D? What happens when there is a deficiency in each vitamin or mineral?

## Ch. 11

What are supplements? Which of the supplements discussed in the text book are most likely to be useful? Which are likely to be dangerous? Why? When are supplements useful in general? What kinds of fallacies do we have to be careful of when we assess the value of supplements? How are supplements regulated in the US?

Ch. 12

What is ethanol? How is it produced? What is "proof"? How is alcohol concentration measured? How can we calculate the amount of alcohol in a drink? What is blood alcohol concentration? How are different levels of blood alcohol related to physical impairment?What is alcohol poisoning? what happens to alcohol when we ingest it? How is alcohol metabolized? What is the relationship between alcohol and fat? What happens when we drink too much alcohol? What are phytochemicals? Which phytochemicals do wine and grape juice contain? What are they good for? What benefits might come from drinking a moderate amount of alcohol?

Ch. 13

How are viruses, bacteria and eukaryotic "parasites" different from each other? How do they affect human health? What other contaminants can we find in food? Which pathogens are discussed in the text? How does each one grow and reproduce? What are the effects of each on human health? What are the safest practices for preventing the spread of food-born illness? Why? What foods are most prone to spoilage and growth of pathogens? What are Pasteurization, irradiation, canning and aseptic packaging? What are the advantages and disadvantages of each? What are the safest practices for food preparation and storage at home?

Ch. 7

What is energy balance? How is it related to body weight? What is Resting Energy Expenditure? What is the Thermic Effect of Food? What is Total Energy Expenditure? What other factor is part of TEE? How does exercise affect REE? How can we calculate an estimate of REE?

What is BMI? How is it calculated? How is disease risk related to BMI levels? What is the major limitation of BMI as a tool for evaluating health? What other ways are their to evaluate healthy weight? What are the advantages and disadvantages of each? What are the causes of obesity? How should we eat to avoid obesity? What else should we do? Why do most "diets" fail?