Nutrition 219 Final Exam Study Guide

Chapter 1
How many calories are provided by protein, carbohydrate, fat and alcohol?
Be able to calculate the fat percentage of a food item.
Know the basic characteristics of vitamins
Know the basic characteristics of minerals
What is an essential nutrient?
Which nutrients yield energy upon metabolism?

Chapter 2
What does “nutrient density” mean?
What is fortification?
What major food group is highly fortified?
What order are the ingredients listed on a label?
Know how to read a food label

Chapter 3
In what order does food pass through the G.I. tract (know the order of the parts of the small intestine)?
What food item is not digested in the small intestine?
What organ metabolizes drugs and alcohol?
What nutrients are carried via the lymph system after absorption?
Know the physiological function of the stomach, cardiac sphincter, small intestine, pancreas, liver, gallbladder, & large intestine.

Chapter 4
What are the monosaccharides?
What are the disaccharides? What monosaccharides are the disaccharides made from?
What are the water-soluble (viscous) fibers and what are the insoluble fibers?
What is the normal blood glucose range?
What is the function of insulin?
What is glycogen and where is it stored?
What are the health benefits of a high fiber diet?

Chapter 5: Lipids
What is a triglyceride composed of?
How many calories are in 1 pound of fat?
What factor determines the hardness of a fat at room temperature?
What are the two essential fatty acids?
What foods contain cholesterol?
What are good sources of omega-3 fatty acids?
Which lipoprotein in high levels correlates with low cardiovascular risk?
Which lipoprotein in high levels correlates with a high risk of heart disease?
Be able to calculate fat percentage of kilocalorie intake and grams of fat.
What is the difference between a monounsaturated fat, a polyunsaturated fat and a saturated fat? What are good food sources of each type of fat?
Chapter 6: Proteins
What is an essential amino acid? What is a dipeptide?
What is meant by the amino acid sequence of a protein?
What are the major functions of proteins?
What is a limiting amino acid?
If the diet lacks an essential amino acid, what will be the result?
What kinds of foods are high quality protein sources?
What are complementary proteins?

Chapter 7: Metabolism
What is an anabolic reaction? Catabolic reaction?
When does lactic acid accumulate in the muscles?
When nutrients are eaten in excess, which ones can be stored as fat?
When fasting, what does the body use first for energy?
What does the body eventually adapt to use after long term fasting?
What is the Cori Cycle?

Chapter 8: Energy Balance:
What is the basal metabolic rate?
What percent of your daily energy expenditure is used for basal metabolism?
What factors affect the basal metabolic rate?
What is the main factor that determines metabolic rate?
What chronic diseases are related to central obesity?
What is the body mass index?
When weight is gained or lost, what percent is fat?
What percent does the need for kcalories decline with each passing decade?

CHAPTER 9: Overweight.
Know how fat cells develop and the behavior of fat cells.
What is leptin? On what organ or tissue does it primarily act on?
What is ghrelin? On what organ or tissue does it primarily act on?
What is the best approach to weight loss?
Why do women store more fat around their hips and men store more fat in their abdomen?

Chapter 10: Water Soluble Vitamins
What are the general characteristics of water-soluble vitamins?
How does the body dispose of excess water soluble vitamins?
What is the main function of the B-Vitamins? Why do deficiencies in B vitamins lead to fatigue?
What amino acid is Niacin synthesized from?
What vitamin reduces risks of neural tube defects?
Know the foods that are good sources of Folate.
What factor is required for B12 absorption? Know good food sources of Vitamin B12
Know good food sources of Vitamin C. What is the early sign of Vitamin C deficiency?
CHAPTER 11: Fat Soluble Vitamins
What are the characteristics of fat soluble vitamins
What plant source precursor is converted to Vitamin A in the body?
Know good sources of A.
What is the main function of Vit D?
How does the body synthesize Vitamin D?
What are the best sources of vitamin D in diet?
What is the main function of Vit E?
What is the main function of Vit K?

CHAPTER 12: Water and the Major Minerals
What minerals are lost with sweating and bleeding?
What are the greatest single sources of sodium in the diet?
What is the majority of calcium in the body used for?
What are good food sources of calcium?
What hormones regulate the blood level of calcium?
At what age do adults normally begin to lose bone mass?
Why is it hard to detect the onset of osteoporosis?
At what age is a person’s bone density highest?

Chapter 13: Trace Minerals:
What protein carries iron in the bloodstream?
What is the major storage form of iron?
What factors enhance the absorption of iron?
What foods reduce the absorption of iron?
Approximately what percentage of iron is normally overall absorbed?
Know the process of iron absorption and recycling.
What deficiency would a low level of hemoglobin indicate?
What foods have iron added to them in fortification?

Chapter 14: Fitness
What does ACSM say is the exercise schedule needed to maintain an appropriate level of fitness?
What are the components of fitness?
During vigorous physical activity, how long until glycogen reserves are depleted?
What type of diet promotes superior performance in athletes?
What nutrient raises muscle glycogen concentration?
What fuel is used by muscle cells after about 20 minutes of low or moderate physical activity?
Chapter 15: Pregnancy and Lactation:
What is a “critical period”?
At what stage in pregnancy is there a beating heart and complete nervous system?
The neural tube forms the initial part of what structure?
When is taking folate to lower birth defects most effective?
Ideally how much weight should a normal woman gain during pregnancy?
Which nutrients increase their absorption in pregnancy?
What is the most reliable indicator of an infant’s future overall health status?
What is the recommendation for alcohol in pregnancy?
What period of pregnancy would the most damage occur from alcohol intake?

Chapter 20
What is the major reason for hunger in the U.S.?
What can a SNAP debit card be used to purchase?
What is the “Feeding America” program?
Which nutrients are most commonly lacking in diets worldwide?
Approximately what number of children worldwide die each year of malnutrition and malnutrition-related causes?
Understand the characteristics of acute vs chronic malnutrition

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