1.) What is mucus, where is it found, and what is its purpose in the digestive tract? a thick, sticky substance that lines and protects the inner walls of the digestive organs; facilitates the passage of food and protects the lining

2.) What is peristalsis? regular muscular contractions that move food through the digestive tract

3.) What is the purpose of a sphincter? a ring of muscle that aids in the one way passage of food through the digestive tract

4.) How does food move through the digestive tract? peristalsis

5.) Name the six types of nutrients: carbohydrates, water, proteins, minerals, vitamins, fats

6.) What are three types of carbohydrates and which one of the three cannot be digested? Sugar, starch, and fiber; Fiber cannot be digested

7.) Define the following terms:
   - Vitamins – chemical made by a living organism
   - Minerals – chemicals that occur naturally in the environment
   - Essential Amino Acids – the nine amino acids that your body can’t make and that you must get from the foods that you eat

8.) Why does your body need water? Transport nutrients and waste; Controls temperature; Carries out chemical reactions

9.) What is a starch and how is it digested? a complex carbohydrate; amylase found in saliva digests (breaks down) the starch into sugar

10.) What is a sugar? a simple carbohydrate

11.) What are the basic steps of a Starch test? 10 drops of sample, 3 drops of Lugol’s solution

12.) What are the basic steps of a Sugar test? 20 drops of sample, 10 drops of Benedict’s solution, and a 1 min. water bath

13.) What is a positive reaction for a starch test? Negative reaction?
   Positive reaction – color change of black; Negative reaction – no color change or brown

14.) What is a positive reaction for a sugar test? Negative reaction?
   Positive reaction – color change of red, orange, yellow, green, or purple; Negative reaction – no color change or blue

15.) What does amylase do to starch and why is it important that this happen? Amylase breaks down starch into sugar so the smaller molecule (sugar) can be more readily used to provide energy and be used by cells

16.) What is a calorie? the amount of energy needed to raise the temperature of one gram of water by one degree Celcius

17.) What is a nutrient? fuels your body needs to keep you growing, used for growth and repair and to fight disease
18.) What is a protein? A large organic molecule made of carbon, hydrogen, oxygen, nitrogen, and sometimes sulfur; it is needed for building and repair of tissue in the body

19.) Where does the digestion of protein first take place and what enzyme is responsible for it? The stomach; pepsin

20.) What is an ulcer and how can it occur? It is a small hole in the lining of the stomach wall and is caused when gastric juice digests the wall if the thick layer of mucus is not thick enough

21.) How many layers of muscles overlap the stomach? Three

22.) What causes heartburn? Gastric juice backing up into the lower esophagus

23.) Why are proteins needed by the body? Used to build and repair tissues; muscles are mostly protein

24.) Gastric juice and muscle action break down food into a thick liquid called chyme.

25.) What is gastric juice? A liquid made up of pepsin and hydrochloric acid (HCl); helps chemical digestion in stomach

26.) Define/Describe the purpose of the following organs:

Mouth – The entrance to the digestive system where chemical and mechanical digestion occur by teeth, tongue, and the enzyme amylase

Esophagus – A muscular tube that connects the mouth to the stomach

Stomach – Organ where pepsin begins chemically digesting proteins and muscles contract to help mechanically digest food and turn it into a liquid called chyme

Small intestine – Part of the digestive system where most chemical digestion and absorption of nutrients occurs; fats begin to be digested here

Large intestine – Organ where water is absorbed into the bloodstream and material is prepared to be removed as waste

Rectum – A short tube where waste is compressed into a solid form

Anus – A muscular opening at the end of the rectum where waste is removed

Pancreas – A triangular organ that lies between the stomach and the first part of the small intestine; produces enzymes that flow into the small intestine that break up starches, fats, and proteins

Liver – Produces bile to break down fat particles in the digestive tract

Gallbladder – An organ that stores bile and secretes it into the small intestine

27.) What is mechanical digestion and where in the body does it occur? The process of breaking down food into smaller pieces for chemical digestion; mouth and stomach

28.) What is chemical digestion and where in the body does it occur? The process of breaking down chemical bonds in nutrients and changing them into simpler forms to be absorbed by the bloodstream; mouth, stomach, and small intestine
29.) Identify structures A through G in the diagram below and to the right:

A. esophagus

B. stomach

C. pancreas

D. rectum

E. small intestine

F. large intestine

G. liver

30.) Give the letter and name of the organ into which food moves after leaving organ B. E – Small Intestine

31.) Give the letters and names of the two organs shown in the diagram through which food does NOT travel. Liver and Pancreas

32.) What is the name and function of organ A? The esophagus is a muscular tube that connects the mouth to the stomach

33.) Use the following image to answer the question below:

Which of the images below show the correct view of the inside of the small intestine? Why does the structure of the small intestine enable it to do its job (chemically digesting and absorbing nutrients) better? Diagram A, the villi attached to the small intestine wall increase the surface area and enable nutrients to be absorbed faster because there is more wall space available for nutrients to be absorbed as chime flows through the small intestine
34.) The energy your body needs comes from **food**.

35.) What nutrients are made up of amino acids? **proteins**

36.) The process in which your body breaks down food into small nutrient molecules is called **digestion**.

37.) What organ produces bile? **liver**

38.) What digestive organ releases enzymes that help break down starches, proteins, and fats in the small intestine? **pancreas**

39.) When you swallow, a flap of tissue called the **epiglottis** prevents food from entering your windpipe.

40.) One of the roles of the **large** intestine is to prepare waste material for elimination.

41.) The **Food Guide Pyramid** classifies food into six groups and helps a person know the number of servings from each group to eat every day.

42.) The esophagus and the stomach are lined with a thick, slippery substance called **mucus**.

43.) Nutrient molecules pass from the small intestine into the bloodstream through tiny structures called **villi**.

44.) The **gallbladder** stores bile and releases it through a tube into the small intestine.

45.) Bacteria in the **large intestine** make vitamin K.

46.) The undigested waste eliminated is known as **feces**.

47.) Food is pushed through the esophagus to the stomach by the waves of muscle contraction known as **peristalsis**.

48.) Water from the digestive system is absorbed in the **large** intestine.

49.) Most chemical digestion takes place in the **small intestine**.

50.) Why doesn’t the large intestine produce enzymes? **the food is already digested by the time it reaches the large intestine**