Science 9-Biology

Worksheet 7-2—Digestion in the Small and Large Intestine

_____
10

Name _____

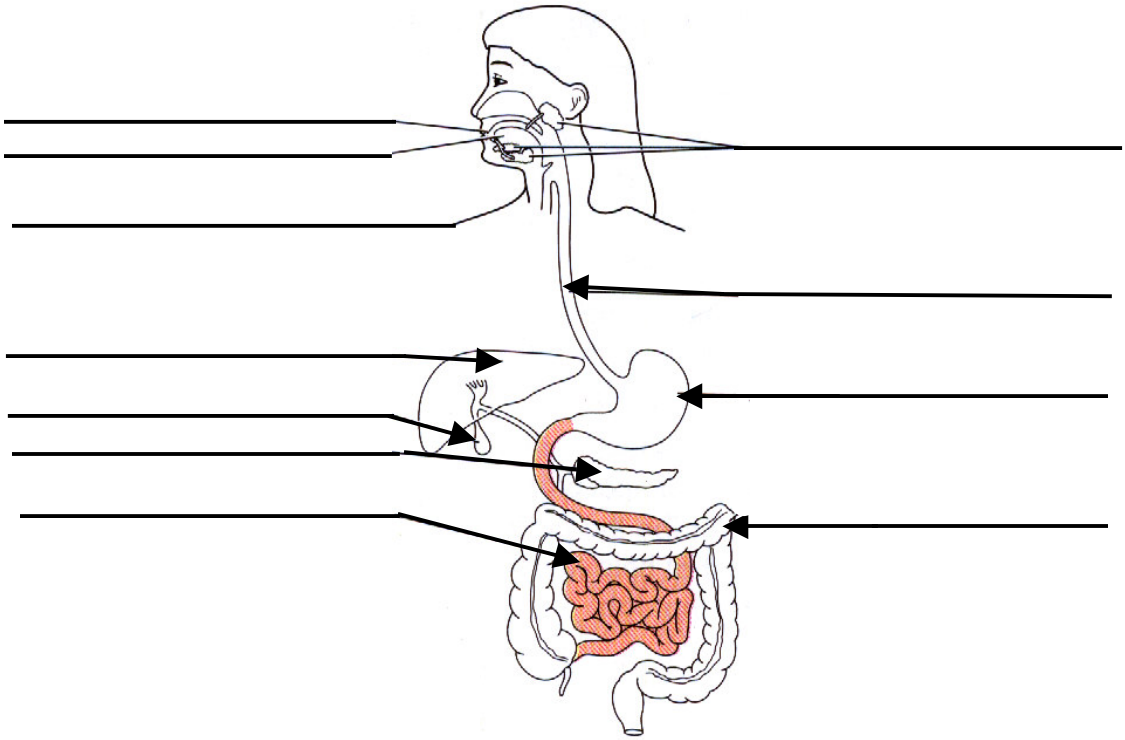
Due Date _____

Show Me ☐ Hand In ☐

Correct and Hand In Again By _____

Read pages 140-147 of SP to help you answer the following questions:

1. Label the names of organs on the following diagram:



2. A distance of six meters in this classroom goes from the window, approximately to the _____. This is the approximate length of the _____ intestine!

3. Draw a circle about 2.5 cm in diameter:

   This is the approximate diameter of the _____ **intestine**.

4. Now draw a circle showing the approximate diameter of the **large intestine**:

5. The **large intestine** has a length of about _____m, or the distance from the windows to the _____.

6. Why is the mixture entering the small intestine very **acidic**? _____

   _____

7. Why doesn't the inside wall of the small intestine get "digested" by the acidic stomach acid in the mixture of food entering it? _____

8. The process of _____ moves the food through the small intestine.

9. How long does it usually take the food to get through the small intestine? _____

   Suggest a reason that it takes so long. _____

10. Are **carbohydrate** and **protein** molecules broken down to small enough molecules in your mouth and in your stomach that they can be absorbed into your blood stream?

    _____. These nutrients are broken down farther in the first _____ cm of the

    _____ intestine.

11. In the **small intestine**:

Carbohydrates are broken down into →	
Proteins are broken down into →	
Vitamins and Minerals are →	
All nutrients are broken down into molecules small enough to →	

12. **Enzymes** needed to break down food molecules are:

    1. Produced in the **cells** lining the walls of the _____

    2. Added to the small intestine from an organ called the _____

13. A substance called sodium bicarbonate goes into the small intestine to **neutralize** the harsh stomach acid in the food entering the small intestine. This substance is produced in the _____

14. Where is your **liver** located in your chest cavity? _____

    Is it a small or large organ? _____

15. The liver produces a **green fluid** called _____. This fluid is stored in the _____ much like windshield washer fluid is stored in a little plastic container in your car.

16. Is **bile** really a digestive enzyme? _____. Does it help speed up a chemical reaction in the body? _____. What does bile actually do to large **fat** droplets? _____. This increases the _____ _____ of the droplets and helps **enzymes** digest the fats more quickly.

17. When there is too much cholesterol in the bile _____ can be formed in the **gall bladder**. What do you think will happen if these crystals block the tube which the bile passes through? Do you know of anyone who has had this condition? _____ Would there be any pain? _____

18. Some of the functions of the **liver** are:

1	To produce bile to help the digestive system break up large fat droplets
2	To
3	To

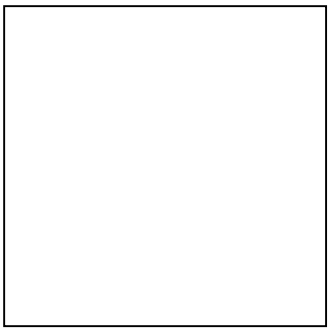
19. Draw a copy of Figure 7.12 on the bottom of page 141. This represents the top section of the small intestine. Show and label all of the substances entering and where they come from.

20. **Absorption** is the process by which _____

_____

21. **Absorption** takes place in the _____ that line the walls of the small intestine.

22. Draw Figure 7.13 showing the folded inner surface of the small intestine:



23. If you were to stretch out the inside surface of an adult's small intestine. (unfold all the folds) its area would be that of the _____of a _____ Why is there such a large surface area in the small intestine? (HINT: What happens through these walls?) _____

_____

24. The last part of the digestive system is called the _____**intestine**.

Mucus is produced in the walls of this organ to help _____

_____.

25. What has happened to most of the **nutrients** that were in the food by the time the mixture reaches the large intestine? _____.

This creamy mixture now contains mainly _____ and _____ materials such as **fibre**.

26. **Elimination** is the _____

This is sometimes called a _____ movement.

27. The wastes you eliminate from your large intestine are called _____

28. What happens to much of the water in the feces as it passes through the large intestine?

_____

_____L to _____L of water are absorbed into the body in one day.

29. To summarize:

    The **small intestine** releases _____ to the rest of the body.

    The **large intestine** releases _____ to the rest of the body.

30. Organisms that live inside of our large intestine are _____

31. **Bacteria** in our large intestine help us in three ways:

1	
2	
3	

32. Feces are about _____% **water** and ____% **solid** material. The solid material in feces is

    mainly _____ _____ and _____.

33. Having enough **fibre** in the feces helps it to _____ to move easily through the large intestine.

34. It normally take from ____ to _____ hours for material to move through the large intestine.

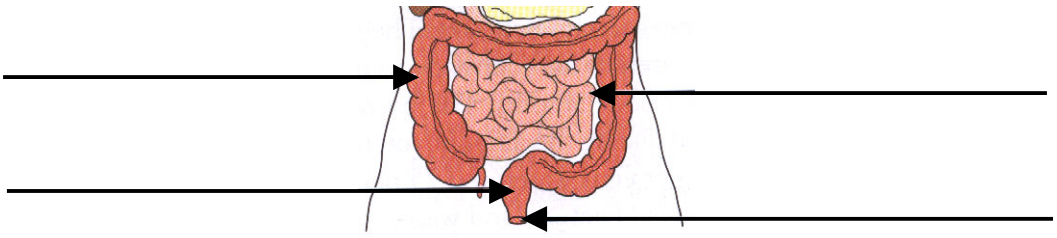
35. The process of _____moves the food through the large intestine.

36. The **rectum** is a _____. It

    _____ to hold and store feces until they are eliminated.

37. The feces leave the body through an opening called the _____

38. Label the parts on the following diagram:



39. "Heartburn" is actually pain felt in the _____ and is often the result of acidic stomach contents felt in this organ. Does it have anything directly to do with the heart? _____

40. An **ulcer** is a _____ in the wall of the digestive system. _____ acid and pepsin in the stomach are designed to digest _____, which is just what the walls of your digestive system are made of. Normally, the walls of your digestive system are protected by a layer of _____. What dangerous thing can happen if an **ulcer** is left untreated? _____ _____.

41. Ulcers are through to be caused by stress, over production of stomach acid and also by a type of _____ called **helicobacter pylori**

Read the following:

Until recently, it was felt that most ulcers were caused by lifestyle factors such as poor diet, too much stress, heavy drinking, and smoking. But amazingly, it now seems in the majority of cases the real culprit may be this tiny bacteria. As Helicobacter invades the stomach lining, it disrupts the protective mucous layer and allows the corrosive stomach acids to come in direct contact with the delicate tissues below. This can then lead to peptic ulcers and stomach inflammation called gastritis. In fact, chronic gastritis is the hallmark of Helicobacter. It is found in nearly all those infected.

The real breakthrough is the evidence that Helicobacter infection is the culprit in up to 90% of duodenal ulcers. Most of the other 10% are probably caused by too much aspirin, ibuprofen, and other anti-inflammatory drugs. Stress and diet may play a role in aggravating an ulcer, but no longer seem to be the main cause. The good news is that we now have medications to eradicate Helicobacter which speeds ulcer healing, and more importantly, greatly reduces the risk of ulcer recurrence. Soon, for many people, ulcers will be a thing of the past. Copied from http://www.gihealth.com/html/education/helicobacter.html

42. The build-up of **feces** in the intestine and rectum for a longer period of time than normal is called _____

43. What happens in **diarrhea**? _____

The main causes of diarrhea are _____, _____ and stress. Diarrhea can be easily treated yet it is actually the cause of many infant deaths in the world. Suggest why this is so. _____ _____