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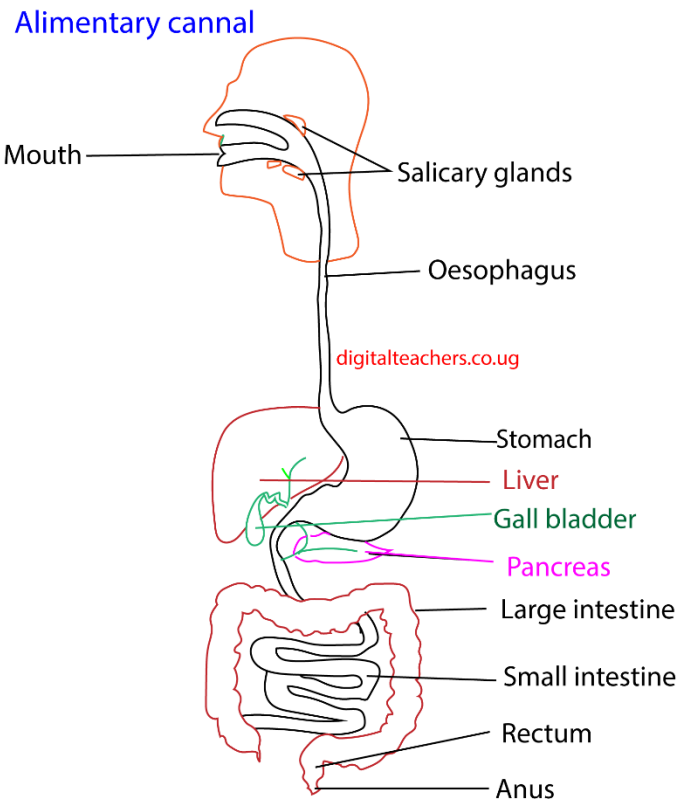
Digestion

This is the process of breaking down food into smaller particles that can be absorbed and used in the body.

The following are reasons why our bodies need food:

1. To change the food to energy which is used by the body for movement, for blood circulation, breathing, etc. we need to take in carbohydrates and fats to provide the energy.
2. To keep us warm and maintain our body temperature at 37°C which is above the temperature of our surrounding. Carbohydrates and fats are needed to provide the heat to the body.
3. We need to take in proteins that will be used to build new flesh, new bones and new muscles. We also need proteins to help in body repair and growth.
4. We need to take in vitamins and mineral salt to protect our bodies from diseases.

Human digestive system



Parts of the digestive system

The digestive system comprises of the;

- Mouth
- Gullet / Esophagus
- Stomach
- Small intenstines
- Large intestine
- Anus

Small intestine

- Pancreas and rectum

NB. Liver and pancreas are not part of alimentary canal but play a role in digestion.

Mouth

What function does the mouth play in digestive?

The mouth has teeth, the jaw, the tongue and saliva.

- The jaw holds the teeth.
- The teeth crush food into smaller pieces
- Saliva has amylase enzyme that breaks starch to maltose
- Saliva contain mucus that lubricate food and making it easier to swallow.
- The tongue rolls up and mixes food with saliva for easy swallowing.
- The tongue helps during swallowing by pushing the food to the back of the mouth.
- The tongue tastes and discriminate bad food

Sets of teeth

A person has two sets of teeth. The first set is the **milk teeth** also called the deciduous teeth. The set consists of **incisors, canines** and **premolar** only .The total number of milk teeth is 20.

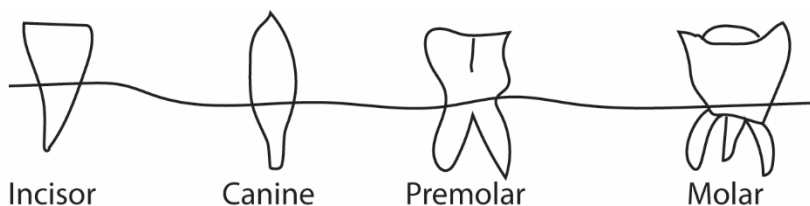
The second set is composed of 32 teeth. This set is called the permanent teeth and it replaces the milk teeth. The permanent set of teeth consists of four types of teeth.

Types of teeth

There are four different types of teeth.

1. **Incisors** for nipping, cutting and biting.
2. **Canines** for biting, cutting and tearing.
3. **Premolars** for crushing, chewing and grinding.
4. **Molar** for crushing ,chewing and grinding

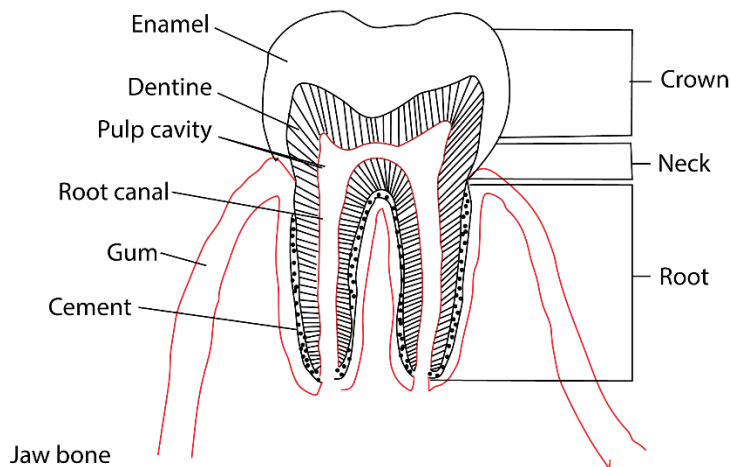
Drawing of teeth



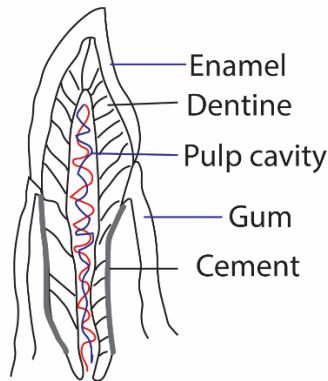
Characteristics of teeth and their functions

Type of tooth	Features	Functions of the tooth	Number in adult
Incisor	Has one root It is chisel-shaped	Biting and cutting	8
Canine	Has one root It is sharp and pointed	For tearing	4
Premolar	It has two roots Has uneven top	Crushing food Grinding food Chewing food	8
Molar	Has three roots Has uneven top	Crushing food Grinding food Chewing food	12

Cross section of a molar tooth



Crosssection of canine tooth



Teeth are made of a very hard substance called **dentine**, which in turn is covered by even a harder substance called **enamel** made of calcium and phosphate salts.

The part of teeth called **pulp cavity** carries blood vessels to provide nutrients and oxygen to the teeth. The pulp cavity also carries nerves.

Teeth and mouth diseases

- (i) Dental caries
- (ii) Mouth ulcers
- (iii) Bleeding gum
- (iv) Bad breath

Care of teeth

- (a) Teeth be brushed/cleaned after every meal to prevent **tooth decay**. Tooth decay is caused by **food remains** that remain in the mouth in between the teeth and gum after feeding.
- (b) Avoid eating sugary foods such as sweet and biscuits or drinking sugary juice.
- (c) Visit a dentist in case of any problem
- (d) Eat food that contain calcium such as milk and eggs

Gullet

It connects the mouth with the stomach

Food moves through the gullet to the stomach by **peristalsis**.

Stomach

The stomach is like an elastic bag that keeps food temporarily. It mixes the food continuously and releases a small amount of it at a time into the intestines.

Functions of the stomach

1. Acts as a temporary store for food.
2. Produce enzymes that digest proteins.
3. Produce hydrochloric acid that kills germs
4. Absorbs food like glucose, vitamins, and ethanol
5. Pounds food into small particles for easy digestion

INTESTINES

The intestine is divided into the small intestine and the large intestine.

The small intestine

The small intestine is a long narrow tube between the stomach and the large intestine where:

- (i) Digestion of food takes place.
- (ii) Water and nutrients from the food are absorbed into the blood.
- (iii) Undigested materials are pushed into the large intestine.

The large intestine

Functions of the large intestine include:

- (i) To absorb most of the water still remaining in the undigested food.
- (ii) Holding undigested materials that form the **feces** which are pushed out.

Other organs of digestion

Pancreas

Produces **pancreatic juice** into the small intestines which continues the digestion of proteins found in foods like meat and starch found in foods like maize. It also begins the digestion of fats and oils.

Liver

Produces bile that emulsifies or breaks down fats into small particles.

It stores vitamins and minerals. It also controls the amount of sugar in the body.

Rectum

It holds the undigested material (waste matter) and releases it to the anus.

Anus

Passes out the undigested material out of the body.

Disease that affect the alimentary canal

- (i) Cholera
- (ii) Dysentery
- (iii) Peptic ulcers
- (iv) Worms
- (v) Cancer

Caring for alimentary canal

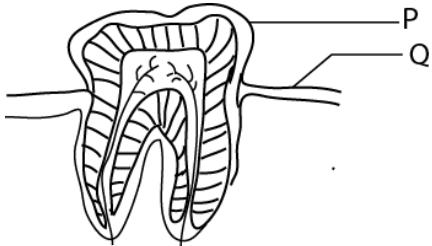
- (a) Wash your hands before eating food
- (b) Do not move bare footed
- (c) Eat balanced diet at regular interval
- (d) Regularly deworm yourself
- (e) Drink enough fluids.

Revision questions

1. Why is iron important element in our diet?

.....
2. Name one source of vitamin B

.....
The below id of a human tooth. Use it to answer questions 3 and 4.



3. Name part marked P
Enamel

4. What is the function of structure marked Q

.....
5. Bbosa usually brushes his teeth before eating a meal. Why is this not a good practice?

.....
6. Why must fruits and vegetables be included in our diet?

.....
7. In the space provided below, draw a simple diagram of a molar tooth.

8. What causes anemia?

.....
9. Common salt give flavor to our food. State on more use of slat in our diet.

.....
10. State one method of avoiding tooth decay.

.....
Mrs. Bbosa has anemia, which food from the list would you advise her to eat?

11. Give reason for your answer in question 12.

.....

12. (a) State two causes of diarrhea.

.....

(b) State two functions of mammalian teeth?

.....

.....

(c) An elderly man has lost all his molar teeth. What feeding problems would be experience?

.....

.....

13. Scurvy is cause by lack of a vitamin. Name the vitamin.

.....

14. Name the main food you would eat to prevent scurvy?

.....

15. Bbosa lost all the molars. What problems is he likely to have while eating?

.....

16. State one reason why water is important in our diet.

.....

17. Food was given to very hungry children and they ate it very fast without chewing.

(a) State any two problems that are likely to affect their digestion system.

.....

(b) State two uses of saliva in in the digestive system.

.....

18. Name the tooth in the diagram below.



19. Give one danger of poor disposal of human feces.

.....

20. Why do you wash your hands before eating?

.....
21. Mention one reason why drinking water should be boiled

.....
22. Give any one reason why you think that brushing of teeth prevents tooth decay.

.....
23. What is the importance of mineral salt in a child's diet.

.....
24. What advice would you give to a mother whose child is suffering from kwashiorkor?

.....
25. Why are canine teeth suitable for tearing food?

.....
26. Use the list of food stuffs given below and answer the following questions.

(a) Give two food stuffs that are a source of proteins.

(i)

(ii)

(b) How are cabbages useful in one`s diet?

.....
(c) Why would you regard a list of the foods given above a balanced diet?

.....
27. Give the function of teeth in the process of digestion.

.....
28. What disease is likely to attack children whose diet lacks proteins?

.....
29. When it is said that Badru is anemic, what is lacking in his blood?

.....
30. Give any one reason why a child`s diet should more proteins than that of an adult.

.....
31. How is the absence of iodine harmful to our health?

.....
32. Name any cereal which is used as food.

.....
33. What first aid would you give a person who is suffering from diarrhea?

.....
34. The table below shows food stuffs prepared in different families

Study it and answer questions that follow

Family A	Family B	Family C	Family D
Matooke Yams Meat beans	Cassava Beans Posho yams	Potatoes Posho Cassava yams	Milletes Fish Goat milk Mangoes

(a) Which family will be able to have vitamin C?

.....

(b) Which family has proteins but lacks fats?

.....

(c) What food nutrients are lacking in family A?

.....

(d) Which family has almost a balanced diet?

.....

35. Give any one use of saliva in the digestive system.

.....

36. Give any one practice that can help to control the spreads of cholera in a school.

.....

37. Mention a disease which makes a person to pass out watery stool with blood.

.....

38. What causes kwashiorkor in children?

.....

39. Give any one way in which teeth are important in the digestion of food.

.....

40. How does boiling of water help in the control of typhoid.

.....

41. Give any one cause of cause of malnutrition in adults.

.....

42. The following diagram shows two types of teeth in human beings

.....

Use it to answer question that follow.



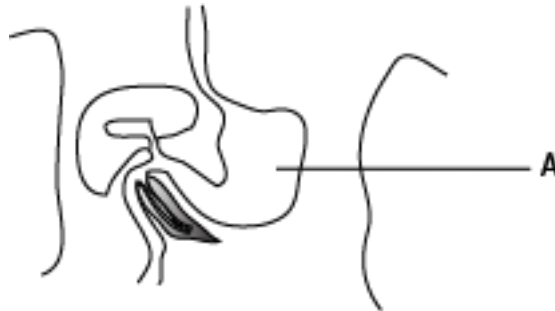
43. (a) Name the type of tooth marked:

- (i) A:
- (ii) B:

(b) Give the use of each of the teeth in the diagram above.

- (i) A
- (ii) B

The diagram below part of the human digestive system.
Use it to answer question **44**



44. Name the class of food which is digested in the part marked A.

.....

45. Apart from carbohydrates, name one other class of food that gives the body energy.

.....

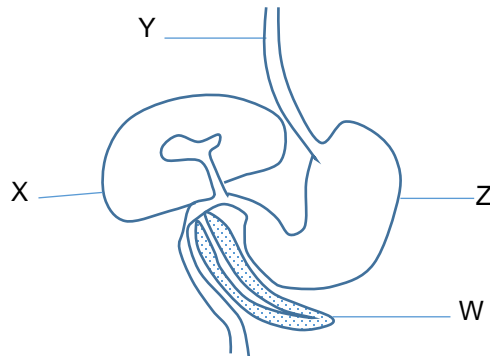
46. Which deficiency disease is caused by lack of vitamin d in children`s diet?

.....

47. Apart from brushing, how else can dental carries be prevented?

.....

48. The diagram below is part of the human digestive system. Use it to answer the questions that follows



(a) Name the parts marked Y and W

(i) Y -

(ii) W -

(b) State the functions of the parts marked Z

-

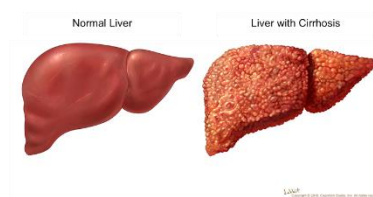
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(c) Give any one disease that affects the parts marked X

Liver cancer

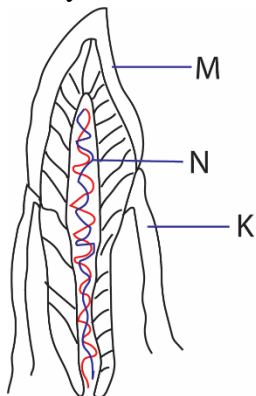


cirrhosis



49. The diagram below shows a section through a human tooth

Study and use it to answer the questions that follow



(a) Name the parts marked M and K

(i) M

(ii) K

(b) Which mineral salt helps to form part M?

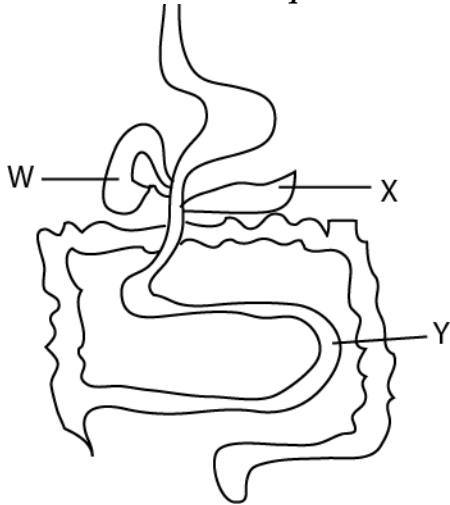
.....

(c) Give the function of the part labelled N

.....

50. The diagram below shows the alimentary canal of the human being

Use it to answer the question that follow.



(a) Name the part marked:

W:

X:

(b) State any one process that takes place labelled **Y**

.....

(c) Give one function of the organ labelled **X**

.....

51. Food was given to very hungry children and they ate it very fast without chewing.

(a) State any two problems that are likely to affect their digestion system.

.....

.....

(b) State two uses of saliva in in the digestive system.

.....

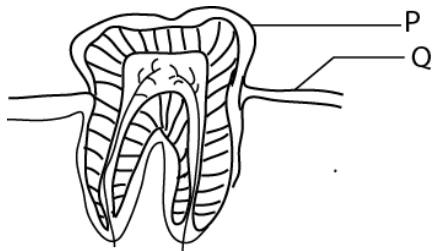
.....

52. Give one danger of poor disposal of human feces.
.....
53. Explain one way of keeping food safe and clean.
.....
54. Why do you wash your hands before eating?
.....
55. Why is a person suffering from diarrhea given treatment for dehydration?
.....
56. Give any one sign of dehydrated person.
.....
57. Give any one use of saliva in the digestive system.
.....
58. What a structure enables the absorption of food to take place in small intestines?
.....
59. Explain how to prepare Oral Rehydration Solution (ORS).
.....
.....
.....
.....
60. State any one piece of advice you would give to a person who suffers from indigestion.
.....
.....
.....
.....
61. What name is given to a meal containing all food values in their right amount?
.....
.....

Suggested answers

1. Why is iron important element in our diet?
It is used in the formation of red blood cells or hemoglobin
2. Name one source of vitamin B
Liver, fish, fresh green vegetables, eggs, etc.

The below id of a human tooth. Use it to answer questions 3 and 4.



3. Name part marked P
Enamel
4. What is the function of structure marked Q
It holds the tooth firmly to the jaw.
5. Bbosa usually brushes his teeth before eating a meal. Why is this not a good practice?
Brushing the teeth before and then eat leaves food particle in the teeth attracting germs.
6. Why must fruits and vegetables be included in our diet?
To provide vitamins and roughages
7. In the space provided below, draw a simple diagram of a molar tooth.



8. What causes anemia?
Lack of enough iron in blood
9. Common salt give flavor to our food. State on more use of slat in our diet.
**Preserve diet
For water balance in the body**
10. State one method of avoiding tooth decay.
Regular brushing of teeth after every meals.

11. Mrs. Bbosa has anemia, which food from the list would you advise her to eat?

Green dodo and beans

12. Give reason for your answer in question 12.

They are both source of iron for formation of hemoglobin.

13. (a) State two causes of diarrhea.

Eating contaminated food

Eating food without washing hands

Drinking contaminated water

(b) How can diarrhea be prevented?

- **Washing hands before eating food**

- **Washing fruits before eating**

- **Covering food properly**

- **By giving a patient with diarrhea plenty of fluids.**

(c) State two functions of mammalian teeth?

Incisors cut food

Canine tear food.

Molar grind food.

(d) An elderly man has lost all his molar teeth. What feeding problems would he experience?

He would not be able to grind food easily

He would be able to swallow easily

14. Scurvy is caused by lack of a vitamin. Name the vitamin.

Vitamin C

15. Name the main food you would eat to prevent scurvy?

Fruits like oranges, lemon

16. Bbosa lost all the molars. What problems is he likely to have while eating?

Bbosa is likely to have a problem of chewing food

17. State one reason why water is important in our diet.

Soften food

Regulate body temperature

To replace water lost in sweating and urination

18. Food was given to very hungry children and they ate it very fast without chewing.

(c) State any two problems that are likely to affect their digestion system.

Indigestion

Vomiting

Constipation

(d) State two uses of saliva in the digestive system.

Softens food

Lubricates food for swallowing
Contains amylase enzyme that digests starch

19. Name the tooth in the diagram below.



Canine tooth

20. Give one danger of poor disposal of human feces.

Spreads diseases such as cholera

21. Why do you wash your hands before eating?

To remove germs

22. Mention one reason why drinking water should be boiled

To kill germs

23. Give any one reason why you think that brushing of teeth prevents tooth decay

Remove food particles that retain bacteria that cause tooth decay

24. What is the importance of mineral salt in a child's diet

Strengthen bones and tooth

25. What advice would you give to a mother whose child is suffering from kwashiorkor?

Feed the child on foods rich in proteins

26. 4. Why are canine teeth suitable for tearing food?

They are sharp and pointed



Canine

27. Use the list of food stuffs given below and answer the following questions.

BEANS, RICE, CABBAGE, MILK, ORANGES.

(a) Give two food stuffs that are a source of proteins.

(i) Beans

(ii) Milk

(b) How are cabbages useful in one`s diet?

Add roughages to prevent constipation

(c) Why would you regard a list of the foods given above a balanced diet?

It contains all the necessary food nutrients

28. Give the function of teeth in the process of digestion.

Break food into smaller particles and increase surface area for digestion of food and easy for swallowing.

29. What disease is likely to attack children whose diet lacks proteins?

Suffers from kwashiorkor

30. When it is said that Badru is anemic, what is lacking in his blood?

Iron in blood

31. Give any one reason why a child`s diet should more proteins than that of an adult.

To enable them grow well

To prevent development of kwashiorkor

32. How is the absence of iodine harmful to our health?

It leads to goiter

33. Name any cereal which is used as food.

Maize, rice, sorghum, wheat oats, barley

34. What first aid would you give a person who is suffering from diarrhea?

Give oral rehydration salt solution to replace lost water

Give fruits

35. The table below shows food stuffs prepared in different families

Study it and answer questions that follow

Family A	Family B	Family C	Family D
Matooke Yams Meat beans	Cassava Beans Posho yams	Potatoes Posho Cassava yams	Millets Fish Goat milk Mangoes

(a) Which family will be able to have vitamin **C? D**

(b) Which family has proteins but lacks fats? **B**

(c) What food nutrients are lacking in family A?

Vitamin C

(d) Which family has almost a balanced diet?

D

36. Give any one use of saliva in the digestive system.

Softens food

Contains enzymes amylase that digests starch

37. Give any one practice that can help to control the spreads of cholera in a school.

Eating hot food

Proper disposal of wastes

Washing hands after visiting the toilets

Early treatment

38. Mention a disease which makes a person to pass out watery stool with blood.

Dysentery

39. What causes kwashiorkor in children?

Deficiency of protein

40. Give any one way in which teeth are important in the digestion of food.

The breakdown food to ease swallowing

They breakdown food to increase surface area for enzyme action

41. How does boiling of water help in the control of typhoid.

It kills typhoid germs

42. Give any one cause of cause of malnutrition in adults.

Poverty-some people cannot afford food or land to cultivate it

Drought-which causes of death

Pests and disease

Floods lead to foot shortage food.

43. The following diagram shows two types of teeth in human beings

Use it to answer question that follow.



(a) Name the type of tooth marked:

(i) A: **Canine**

(ii) B: **incisor**

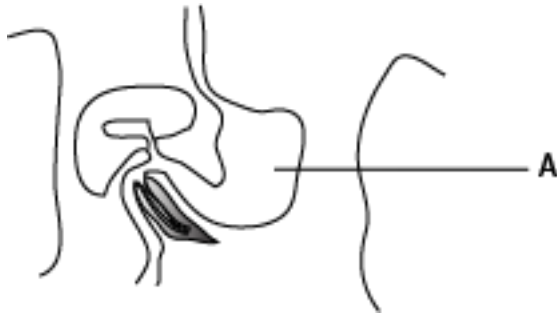
(b) Give the use of each of the teeth in the diagram above.

(i) A for **tearing food**

(ii) B for **cutting food**

The diagram below part of the human digestive system.

Use it to answer question 44



44. Name the class of food which is digested in the part marked A.

Protein

45. Apart from carbohydrates, name one other class of food that gives the body energy.

Fats, oil, lipids

46. Which deficiency disease is caused by lack of vitamin d in children`s diet?

Rickets



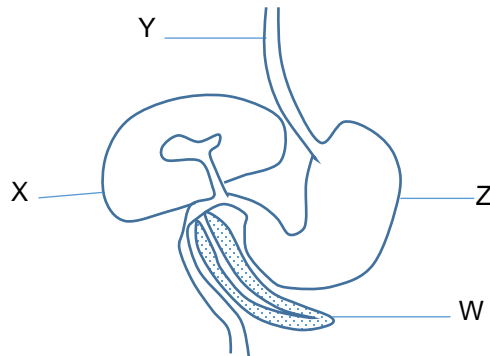
47. Apart from brushing, how else can dental carries be prevented?

By rising mouth after eating

By going for regular medical check up

By avoiding sugary food

48. The diagram below is part of the human digestive system. Use it to answer the questions that follows



(a) Name the parts marked Y and W

(i) Y - esophagus

(ii) W - pancreas

(b) State the functions of the parts marked Z

- pounds food

- produces enzymes for digestion of proteins

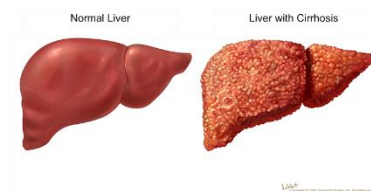
- store food

- produces hydrochloric acid that kill germs

(c) Give any one disease that affects the parts marked X

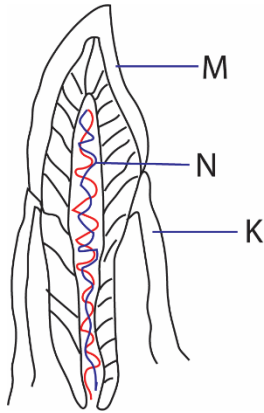
Liver cancer

cirrhosis



49. The diagram below shows a section through a human tooth

Study and use it to answer the questions that follow



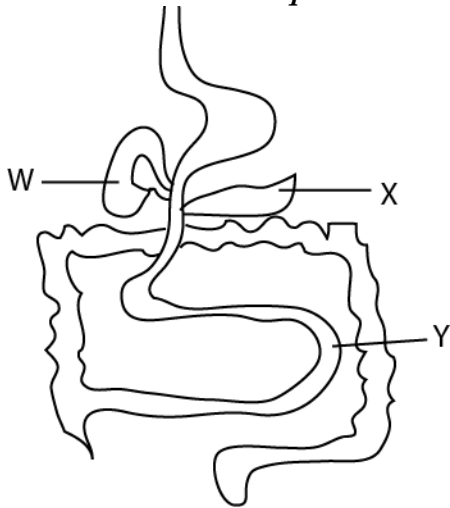
- (d) Name the parts marked M and K
- (iii) M - enamel
- (iv) K - gum
- (e) Which mineral salt helps to form part M?

Calcium

- (f) Give the function of the part labelled N
- Supplies food and oxygen to the tooth

50. The diagram below shows the alimentary canal of the human being

Use it to answer that question that follow.



- (a) Name the part marked: **W: liver**
X: pancreas
- (b) State any one process that takes place labelled **Y**
 Absorption of digest food
- (c) Give one function of the organ labelled **X**
 Produces pancreatic juice that contain enzymes for digestion of food

51. Food was given to very hungry children and they ate it very fast without chewing.

(c) State any two problems that are likely to affect their digestion system.

Indigestion

Vomiting

constipation

(d) State two uses of saliva in in the digestive system.

Softens food

Lubricates food for swallowing

Contains amylase enzyme that digests starch

52. Give one danger of poor disposal of human feces.

Spreads diseases such as cholera

53. Explain one way of keeping food safe and clean.

By covering it

By keeping in refrigerator.

54. Why do you wash your hands before eating?

To remove germs

55. Why is a person suffering from diarrhea given treatment for dehydration?

To replace lost water

56. Give any one sign of dehydrated person.

Pale skin

Sunken eyes

Low pulse

Dry lips

57. Give any one use of saliva in the digestive system.

Softens food

Contains enzymes amylase that digests starch

58. What a structure enables the absorption of food to take place in small intestines?

- thin lining

- villi increase surface area for absorption

59. Explain how to prepare Oral Rehydration Solution (ORS).

a. wash your hands clean

b. prepare a clean dry container about 2l

c. add 1l (two 1/2l cups) of cold boiled water

d. add a sachet of ORS and mix thoroughly.

e. Use in 24hrs

60. State any one piece of advice you would give to a person who suffers from indigestion.

- To chew food properly

- Eat food rich in roughages

- Eat a lot of fruits and vegetables

61. What name is given to a meal containing all food values in their right amount?

Balanced diet