

ANNEXURES

PRE TEST

Class : VII
Subject : General Science

Name : _____
Age : _____

Gender : _____
School : _____

Instructions:

1. Read the questions carefully
2. This test will not attend your final results in any manner.
3. There is no time limit, but try to finish the test in 2 hrs.
4. You may find some of the questions difficult in case do not waste time, go on to the next questions.
5. Don't talk while answering the questions.

Choose the correct Answer :-

1. We get energy from
 - (a) Blood
 - (b) Food
 - (c) Water
 - (d) Salt
2. From oesophagus the food moves towards
 - (a) Gall bladder
 - (b) Liver
 - (c) Stomach
 - (d) Pancreas
3. Digestion takes place in
 - (a) Lungs
 - (b) Liver
 - (c) Stomach
 - (d) Kidney
4. How many times a man sleeping normally takes breathe
 - (a) 10-12 times
 - (b) 4-5 times
 - (c) 20-21 times
 - (d) 72-80 times

5. The main respiratory organ in man is
- (a) Lung (b) Heart
(c) Liver (d) Kidney
6. Rate of heart beat of human beings is
- (a) 20-30 times (b) 50-60 times
(c) 70-80 times (d) 100-150 times
- 7- Human heart has
- (a) 2 Chamber (b) 3 Chamber
(c) 4 Chamber (d) 5 Chamber
8. Main character of artery is
- (a) Carry impure blood
(b) Carry blood from different parts of the body to heart.
(c) Carry blood from heart to different parts of the body.
(d) None of the above.
9. The main excretory organ in human body is.
- (a) Kidney (b) Lungs
(c) Liver (d) Skin
10. One of the following help to excrete out waste products from the body.
- (a) Heart (b) Stomach
(c) Kidney (d) Intestine

Fill up the blanks :

11. The _____ in saliva helps in chemical digestion.
12. The _____ is like a bag, in which food is churned into semi solid parts.
13. In the process of respiration oxygen is taken in and _____ is given out in human beings.
14. The air inhaled through breathing reaches _____

15. The expired air contains carbon dioxide and _____
16. In human body, the heart is located on the _____ side of the chest cavity.
17. From the heart the blood is transported to all the organs of the body by _____ .
18. Temperature is regulated by _____

State whether true/ false

19. The mouth cavity contains salivary glands and teeth only.

20. Bile juice is produced in liver _____
21. During respiration, plants take in oxygen and give out carbon dioxide ____
22. After exercise, the respiratory rate decreases. _____
23. The heart beat of human beings is 100 times per minute.

Match the Column :-

- | | | |
|----------------------------|---|--------------------|
| 25. Beginning of digestion | : | Respiratory system |
| 26. Trachea | : | Circulatory system |
| 27. Unit of kidney | : | Mouth |
| 28. Heart | : | Nephron |
| 29. Artery | : | Excretion |
| 30. Sweat | : | Pure blood |

Short Answer Questions :

31. Where is digested food absorbed into blood in the human body ?

32. Write the sequence by which air enters in respiratory system ?

33. What is the main difference between an artery and a vein ?

34. Define excretion ?

35. What are the main organs of excretory system ?

POST TEST

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Gender : _____
School : _____

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State whether true/ false

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| 30. Sweat | : | Pure blood |

Short Answer Questions :

31. Where is digested food absorbed into blood in the human body ?

32. Write the sequence by which air enters in respiratory system ?

33. What is the main difference between an artery and a vein ?

34. Define excretion ?

35. What are the main organs of excretory system ?

ANSWERS

Choose the Correct answer :-

1. Food
2. Stomach
3. Stomach
4. 10-12 times
5. Lung
6. 72-80 times
7. 4 chamber
8. Carry blood from heart to different parts of the body.
9. Kidney
10. Kidney

Fill up the blanks :

11. Enzyme
12. Stomach
13. Carbon dioxide
14. Lungs
15. Water vapour
16. Left
17. Artery
18. Sweating

State whether true/ false:-

19. False
20. True
21. True

- 22. True
- 23. False
- 25. True

Match the Column :-

- 25. Mouth
- 26. Respiratory system
- 27. Nephron
- 28. Circulatory system
- 29. Pure blood
- 30. Excretion

Short answer questions :-

- 31. Digested food is absorbed through the walls of the small intestine into the blood.
- 32. Nostrils → Trachea → Bronchus → Lungs.
- 33. Artery carry oxygenated blood while the veins carry deoxygenated blood
- 34. Excretion is a process of removal of metabolic waste materials from the body.
- 35. Kidneys, lungs, liver and skin.

REMEDIAL PROGRAMME

The digestive system

1. **The parts of the digestive system :-**

A chart showing the body cavity with all the digestive organs in place was shown to the students. The gullet, stomach, small intestine and large intestine form one long, continuous tube. The liver, pancreas and gall bladder was located.

2. **The process of digestion begins in the mouth and saliva changes starch to sugar :-** To explain this concept the student were asked to perform an activity.

Material required :- Test tube, powdered starch, iodine solution.

Procedure : Take a test tube and pour solution of starch to it. Add few drops of iodine to it after times, it will be seen that solution turns blue black showing the presence of starch. Now add saliva to it . The blue black solution turns colourless showing that starch vanishes from the test tube when saliva is added to it. It means that saliva contains a digestive enzyme amylase which breaks starch into sugar and the process of digestion begins in the mouth.

To make the concept more clear the students were asked to take a piece of chapati. Initially. it was not sweet to taste but later on, it became sweet to taste, showing that salivary amylase act on starch and break it into sugar and the digestion begins in mouth.

3. **The process of digestion :-**

This process was explained through chart. The organs involved in the process of digestion the mouth, pharynx, oesophagus, stomach small intestine, large intestine, liver, gall bladder and pancreas

coordinate to form the digestive system. Through the mouth, the food enters the pharynx. In the pharynx the food lubricated with saliva is swallowed down into the oesophagus. From the oesophagus food gets its way into the stomach. It is stored in the stomach, the wall of which produces the churning effect on the food. Some digestive juices like hydrochloric acid and gastric juices are secreted by the stomach walls. The food from the stomach enters the small intestine. Here proteins, fats and carbohydrates are digested by various enzymes. There are numerous finger-like processes thrown out from the walls of small intestine called villi. The villi absorb the digested food. The last part of the digestive tract is the large intestine. Here, only the undigested food enters as the digested food is absorbed in the small intestine. The undigested food is thrown out through anus. In this way, the process of digestion occurs in human beings.

The technical terms were stressed and written on black board.

To make the digestion process more clear, CD showing the diagram of digestive system was shown to student.

Assessment of student's understanding

An unlabelled chart of digestive system of man with arrow or lines connecting different parts marked as A to J was shown to students. One by one each student was asked to name the different parts (from A to J) of digestive system on the diagram and also correlated with the function.

THE RESPIRATORY SYSTEM

1. The parts of respiratory system: -

A chart showing the respiratory tract with respiratory organs was shown to the students. The position of nasal cavity, pharynx, trachea, larynx, bronchi, bronchial tubes and lungs was located.

2. The process of respiration: -

This process was explained through chart. The organs involved in the process of respiration such as nasal cavity, trachea, diaphragm, bronchi, bronchial tubes and lungs coordinate to form the respiratory system. Air enters the nasal cavity through nostrils, where it is filtered and bacteria being removed by hairs and mucus. From the nasal cavity, oxygen passes through pharynx, larynx and finally to trachea. Cartilaginous rings support trachea and these prevent trachea from collapsing. The trachea divides into the right and left bronchus, which further divides and sub divides after entering the respective lungs. The lungs are elastic, spongy & cone shaped lying in the thoracic cavity. The bronchus divides into finer tubes called bronchioles, which terminates in a tiny chamber called alveolus. From alveoli, through the blood oxygen reaches cells. In the cells food is oxidized and CO_2 and energy is released. In this way, the process of respiration occurs. The technical terms were stressed and written on black board.

To make the concept clearer, a CD showing the structure of respiratory organs was shown to students.

Assessment of student's understanding: -

An unlabelled chart of respiratory system with arrows or lines connecting different parts marked A to E was shown to students. One by one each student was asked to name the correct label (A-E) on the diagram and correlated with the functions.

3. **Working of lungs:** -To explain the working of lungs, following activity was performed.

Material required: - rubber balloon, large bottle, cork, Y tube, sheet rubber, string.

Procedure: - A large bottle was cut from its bottom. A cork was fitted to the neck of the bottle with a Y tube in it. On each of the lower limbs of the Y tube, a rubber balloon is tied. A sheet rubber is tied round the bottom of the jar, with a piece of string knotted through a hole and sealed with wax. Pulling this strings lowers the diaphragm and air enters the neck of the Y - piece causing the balloons to dilate. Pressing the diaphragm upwards has the opposite effect. In the same way, the lungs works.

4. **Expired air contains carbon dioxide :** To explain this concept, students were asked to perform an activity in which a beaker was taken and it was filled half with lime water. The students were asked to insert straw in it and blow air in it through mouth. As soon as the air was blown, the lime water turns milky showing that exhaled air contains carbon dioxide.

5. **Expired air contains water vapour:-** A glass was placed in a refrigerator for one hour. When the glass get cooled, it was taken out from the refrigerator A student was asked to blow air on the cool glass and the moisture (water vapour) coming through the

process of breathing was seen, showing that the expired air contains water vapour.

6. **The effect of exercise on rate of breathing :-** One student was asked to place his hand lightly on another student's chest and count the number of times the student is breathing in 1 min. One inhalation and one exhalation together count as just one breathe. Another student was asked to jump up and down until he breathes quite heavily. Again the breathing rate was counted. It was found that after jumping up and down, the breathing rate increases. To perform exercise, the body needs more oxygen and energy thereby increasing the rate of breathing.
7. **Plants take oxygen and give out carbon dioxide during respiration :-** To explain this concept, the students were asked to perform an activity. A plant was placed in a beaker. This arrangement was then placed in a container containing lime water and the whole arrangement was covered with a jar. The plant was placed in a dark place and examined next day.

It was found that the lime water turns milky showing that carbon dioxide was given off and oxygen was taken in.

CIRCULATORY SYSTEM

1. **The parts of circulatory system:-** The circulatory system consists of heart, blood vessels & blood. A chart showing the internal structure of heart was shown to the students in which the position of left auricle, left ventricle, right auricle, right ventricle, pulmonary artery and pulmonary vein was located.
2. **The process of circulation: -** This process was explained through CD showing diagram of heart: - The heart is a conical muscular organ about the size of a fist of a person. It is the main pumping

organ. It is four chambered in human beings. The upper two chamber are small and are called the auricles and the lower two chambers are larger and are known as ventricles. The left auricle receives the pure blood from the lungs through pulmonary veins. When these auricles contracts, the left ventricle receives the pure blood. The left ventricle further contracts and send the pure blood to different parts of the body through arteries. The arteries carry pure blood. Veins collect the impure blood from different parts of the body to right auricle. The right auricle contracts and pour the impure blood into right ventricle. The right ventricle further contracts and send the impure blood to the lungs through pulmonary artery for purification. This type of circulation of blood is called double circulation as the blood moves twice through the heart. This arrangement prevents mixing of pure and impure blood.

The technical terms were stressed and written on black board.

Assessment of student's understanding

An unlabelled chart of blood circulation with arrows or lines connecting different parts was shown to students. One by one each student was asked to name the correct parts on the diagram and also tell the path of the blood flowing through heart.

- 3. The average pulse rate of a normal man is 72-80 times:** - To make this information more clear, the students were asked to perform an activity. The students were asked to place two fingers on wrist and apply slight pressure by pushing against the back of wrist with the thumb and find the pulse rate by counting for 1 minute. s
- 4. Exercise increases the pulse rate :-** The students were asked to count their pulse rate at rest and note it down in their copies. After

this, the students were allowed to run and again the pulse rate was noted. It was found that after running or vigorous exercise, the pulse rate increases. It is because the body needs more energy to perform exercise. When the body is at rest, it requires lesser nourishment and oxygen and therefore, the heart beats relatively slower. It beats rapidly when the body requires energy for such activities as running, vigorous exercise etc.

THE EXCRETORY SYSTEM

1. **Excretory organs :-** A chart showing a pair of kidney's, lungs, liver and skin was shown to the students. There are various specialized organs for the removal of waste materials from the body. The main excretory organs are a pair of kidneys. The lungs, liver and skin also perform the excretory function. The lungs remove carbon dioxide and water produced as a result of cellular respiration. Urea is a water produced by liver. Kidneys remove urea and other waste from the blood. The skin removes the waste products and salts dissolved in water.
2. **Excretion: -** This process was explained through CD showing the diagram of urinary system in man and internal structure of kidney. The urinary system consists of the organs concerned with the removal of urine. These are a pair of kidneys , a pair of ureter, a urinary bladder and urethra. Each kidney is bean shaped. The functional excretory unit of kidney is nephron. In each kidney, there are more than one million nephrons. Each nephron consists of cup like structure called Bowman's capsule and tubular urinary part. The blood carrying urea enters the Bowman's capsule. In Bowman's capsule lies the network of capillaries, which is called glomerulus's. In the gromerulus, filtration of various substances

takes place. Urea comes as a filtrate from the blood in the urinary tubule. The urinary tubules join to form larger collecting tubule. These collecting tubules pour the urine into ureter. The ureter carries the urine from the kidney to the urinary bladder. From the urinary bladder, urine is passed out through urethra. So, we have seen that the kidneys function as main excretory organs.

The technical terms were stressed and written on black board.

Assessment of students understanding.

An unlabelled chart of urinary system and internal structure of kidney with arrows or lines connecting different parts was shown to students. One by one each student was asked to name the organ's and its parts shown in the diagram and also their function's.

3. **The excretion of water:** - The students were asked to recall the large drops of Perspiration containing water, that formed on their faces and bodies on a warm day after they had been running or playing actively. The water is not only excreted through urine but also through perspiration. It helps to maintain the normal body temperature.
4. **The excretion of mineral salts:** - The students were asked to recall whether they have lick their wrists after they have returned from a recess period where they had been playing actively. It was pointed out that the salty taste is caused by the presence of mineral salts, which were dissolved in the perspiration and left behind after the perspiration evaporated. Perspiration not only regulates the body temperature but also help to remove the excessive mineral salts from the body.