

## Case study based questions

10th Science

# Life Processes

Passage - 1

5 Marks



While explaining the concept of respiration to the students, Mr. Khan took two different examples of organisms where first organism 2 ATP molecules are produced whereas in the respiration system of organism two, 38 ATP molecules are produced

Q 1. Aerobic respiration is followed by

- (1) First organism
- (2) Second organism

Q 2. Anaerobic respiration is followed by

- (1) First organism
- (2) Second organism

Q 3. Which organism can convert glucose into alcohol?

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- (1) First organism
- (2) Second organism

Q 4. What is the full form of ATP?

- (1) Adenisyne tri-phosphate
- (2) Adenosine tri-phosphate
- (3) Adenosine tetraphosphate
- (4) Adenosine monophosphate

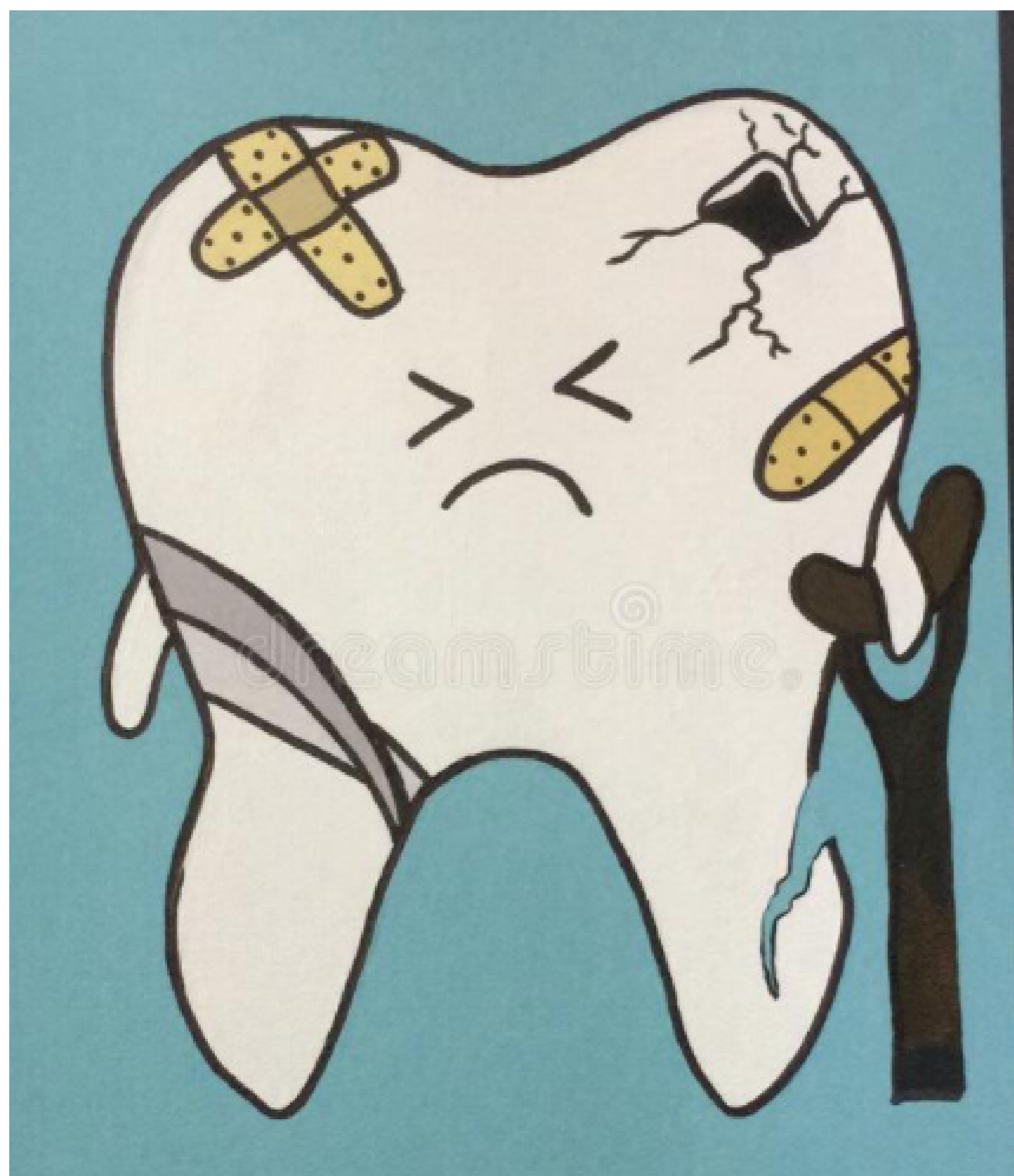
Q 5. Name an organism which follows anaerobic respiration.

- (1) Elephants
- (2) Earthworms
- (3) Fishes
- (4) Archaea

**Passage - 2**

**5 Marks**

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When a person eats sugary food, the bacteria present in his mouth act on the sugar producing acids. The acid first dissolves the calcium salts from the top part of the teeth and then from its middle part damaging the teeth. The damages ultimately reach the lower part of the tooth which contains nerves and blood vessels ultimately causing toothache.

Q 1. Name the top part of the teeth whose calcium salts are dissolved by acids.

- (1) Enamel
- (2) Dentine
- (3) Pulp cavity
- (4) None of the above

Q 2. Name the middle part of the teeth.

- (1) Enamel
- (2) Dentine
- (3) Pulp cavity

(4) None of the above

Q 3. Name the lower part of the tooth.

- (1) Enamel
- (2) Dentine
- (3) Pulp cavity
- (4) None of the above

Q 4. Which of the following statements is true about dental carries?

- (1) Breakdown of teeth due to acids
- (2) Results in pain and difficulty with eating
- (3) Caused by the action of acids on the enamel surface
- (4) All of the above

Q 5. Dental carries is due to

- (1) Hereditary abnormalities
- (2) Bacterial infections
- (3) Viral infection
- (4) Contaminated water

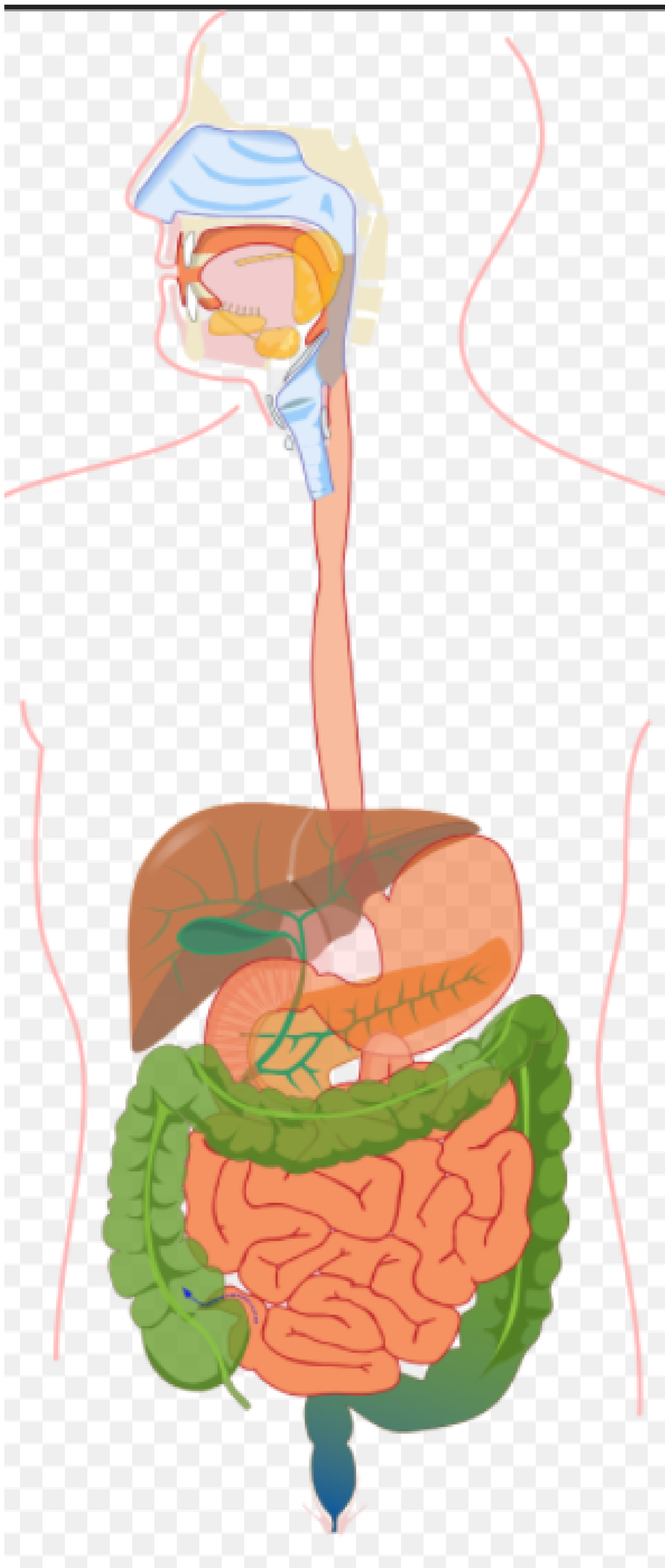
**Passage - 3**

**5 Marks**

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# Worksheet 6.3

Marks - 25



The partially digested food from the stomach goes to next organ for further digestion and enters a long and narrow organ called small intestine which receives the secretions from different glands. Liver secretes a greenish-yellow

liquid. Pancreas secrete pancreatic juice which contains different enzymes which on a note help in the process of digestion

Q 1. Function of liver is

- (1) Excretion
- (2) Digestion
- (3) Histolysis
- (4) Glycogenesis and glycogenolysis

Q 2. Pancreas are

- (1) Endocrine glands
- (2) Exocrine glands
- (3) Mixed glands
- (4) None of the above

Q 3. Small intestine receives secretions from .....

- (1) Liver
- (2) Pancreas
- (3) Both (a) and (b)
- (4) None of the above

Q 4. Liver produces .....

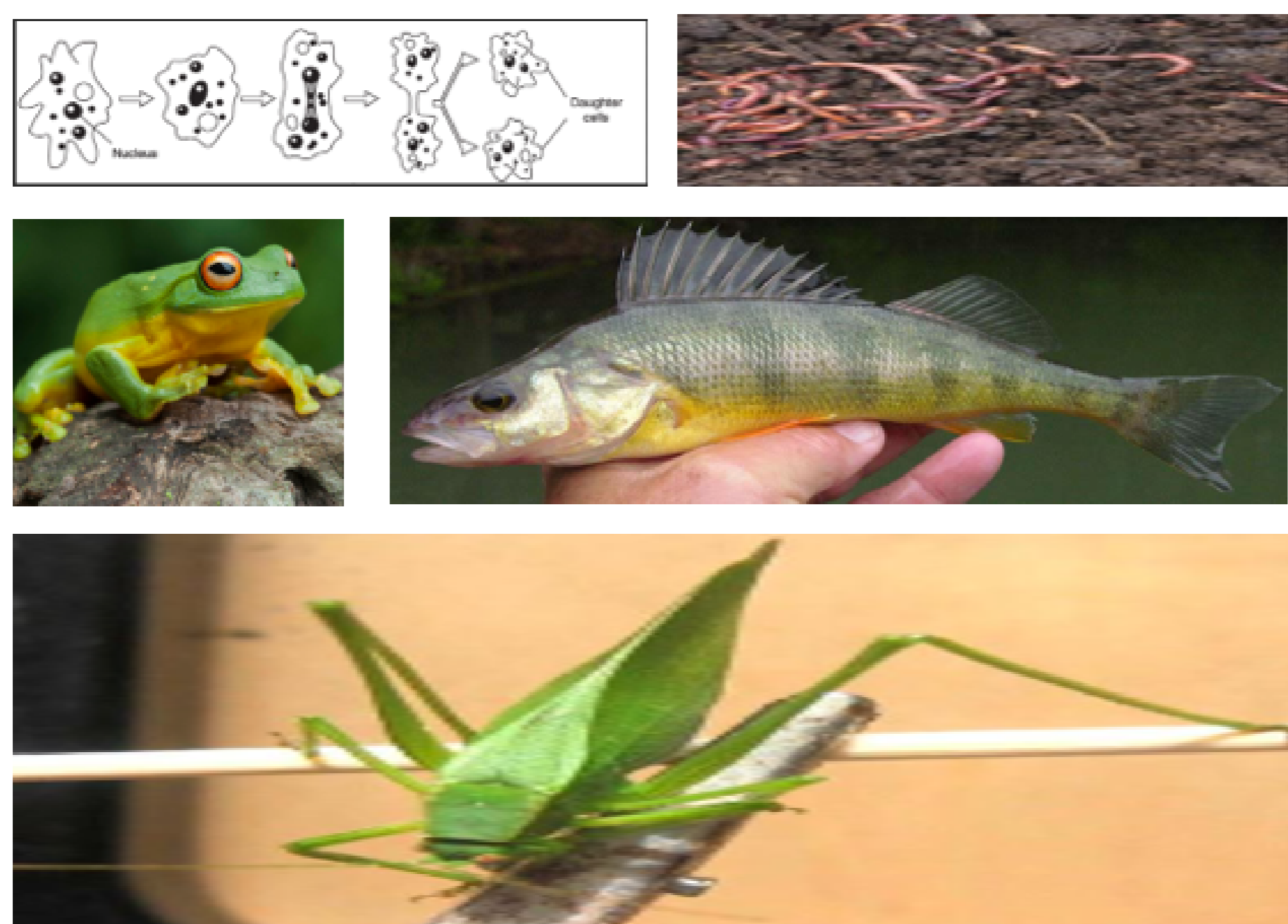
- (1) Bile
  - (2) Iron
  - (3) Cholestrol
  - (4) All of the above
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Q 5. Enzyme not present in pancreatic juice is

- (1) Amylase
- (2) Chymotrypsinogen
- (3) Lipase
- (4) Enterokinase

Passage - 4

5 Marks



During the science lab, Mr. Khan was teaching about the different breathing organs used by different organisms according to their surroundings. Animal A always lives in water and has gills for breathing. Animal B can stay in water as well as on land and can breathe both, through moist skin and lungs. Animal C lives in soil and can only breathe through its skin. Animal D lives on land and breathes through spiracles and tracheae. Animal E breathes through its cell membrane.

Q 1. Which of the animals could be amoeba?

- (1) E
- (2) A
- (3) C
- (4) D

Q 2. Which of the animals could be frog?

- (1) A
- (2) B
- (3) E
- (4) C

Q 3. Which of the animals could be a fish?

- (1) D
- (2) E
- (3) A
- (4) B

Q 4. Which of the following animals could be grasshopper?

- (1) D
- (2) C
- (3) B
- (4) E

Q 5. Which of the following animals could be earthworm?

- (1) B
- (2) D
- (3) A
- (4) C

Passage - 5

5 Marks

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Most living things need oxygen to obtain energy from food. The oxygen reacts with food molecules and that is how energy is obtained which is stored in the form of ATP molecules in the cells. This energy can be used anywhere the body wants to do so. The process of releasing energy from food is called respiration.

Q 1. What is the full form of ATP?

- (1) Adenisyne tri-phosphate
- (2) Adenosine tri-phosphate
- (3) Adenosine tetraphosphate
- (4) Adenosine monophosphate

Q 2. Respiration is

- (1) Catabolic process
- (2) Anabolic process
- (3) Physical process
- (4) Biophysical process

Q 3. Respiration is the process in which -

- (1) Energy is released and stored in the form of ATP
- (2) Energy is stored in the form of ADP
- (3) Energy is not released at all
- (4) Energy is used up

Q 4. The form of energy used in respiration is –

- (1) Electrical energy
- (2) Chemical energy
- (3) Mechanical energy
- (4) Radiant energy

Q 5. How many types of respiration are there?

- (1) 1
  - (2) 3
  - (3) 2
  - (4) None of the above
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## Case study based questions

10th Science

# Life Processes

Passage - 1

5 Marks



During a science lab activity, some sugar solution is taken in a test tube and a little amount of a substance is taken in powdered form named as P. The test tube is allowed to stay still for some-time while the top is covered. When the top is removed from the cork, a characteristic smell is observed and a gas Z evolution also takes place. The gas evolved can extinguish a burning matchstick.

Q 1. Name the powdered substance P?

- (1) Yeast
- (2) Fungi
- (3) Algae

(4) None of the above

Q 2. Name the substance Y whose smell is observed?

- (1) Ammonia
- (2) Ethanol
- (3) Ethane
- (4) None of the above

Q 3. Name the gas Z.

- (1) Carbon dioxide gas
- (2) Hydrogen gas
- (3) Ammonium gas
- (4) None of the above

Q 4. What is the process of conversion practiced in the above activity?

- (1) Decomposition
- (2) Saponification
- (3) Fermentation
- (4) None of the above

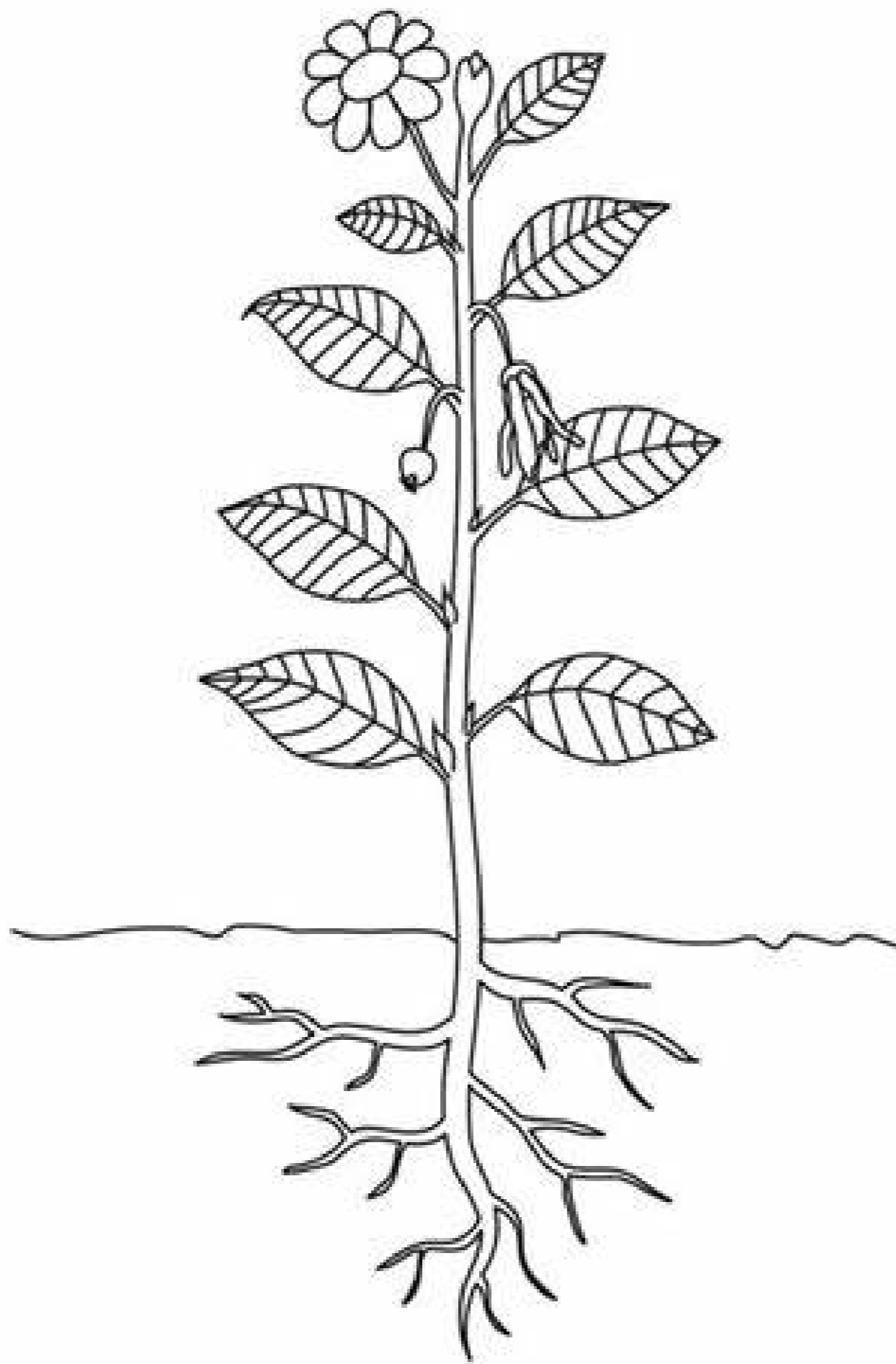
Q 5. What type of respiration is observed in the above activity?

- (1) Aerobic respiration
- (2) Anaerobic respiration

Passage - 2

5 Marks

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The process of transportation occurs in every living organism. Transportation system in plants consists of two kinds of tissue X and Y. The two tissues have different components on a further basis which perform a specified function. These components work differently on the basis that whether the plant is flowering or not.

Q 1. Tissue that transports products of photosynthesis from the leaves when they are synthesized to other parts of the plant, are called

- (1) Phloem
- (2) Stomata
- (3) Xylem
- (4) Guard cells

Q 2. Which of the following substances is transported by phloem tissue?

- (1) Sucrose prepared by leaves
  - (2) Water
  - (3) ATP
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(4) Minerals

Q 3. Xylem in plants is responsible for the transport of:

- (1) Carbon dioxide
- (2) Water
- (3) Sucrose
- (4) Amino acid

Q 4. The two kinds of elements present in xylem are:

- (1) Sieve tube and vessels
- (2) Tracheids and vessels
- (3) Guard cells and fibres
- (4) Sieve tube and companion cells

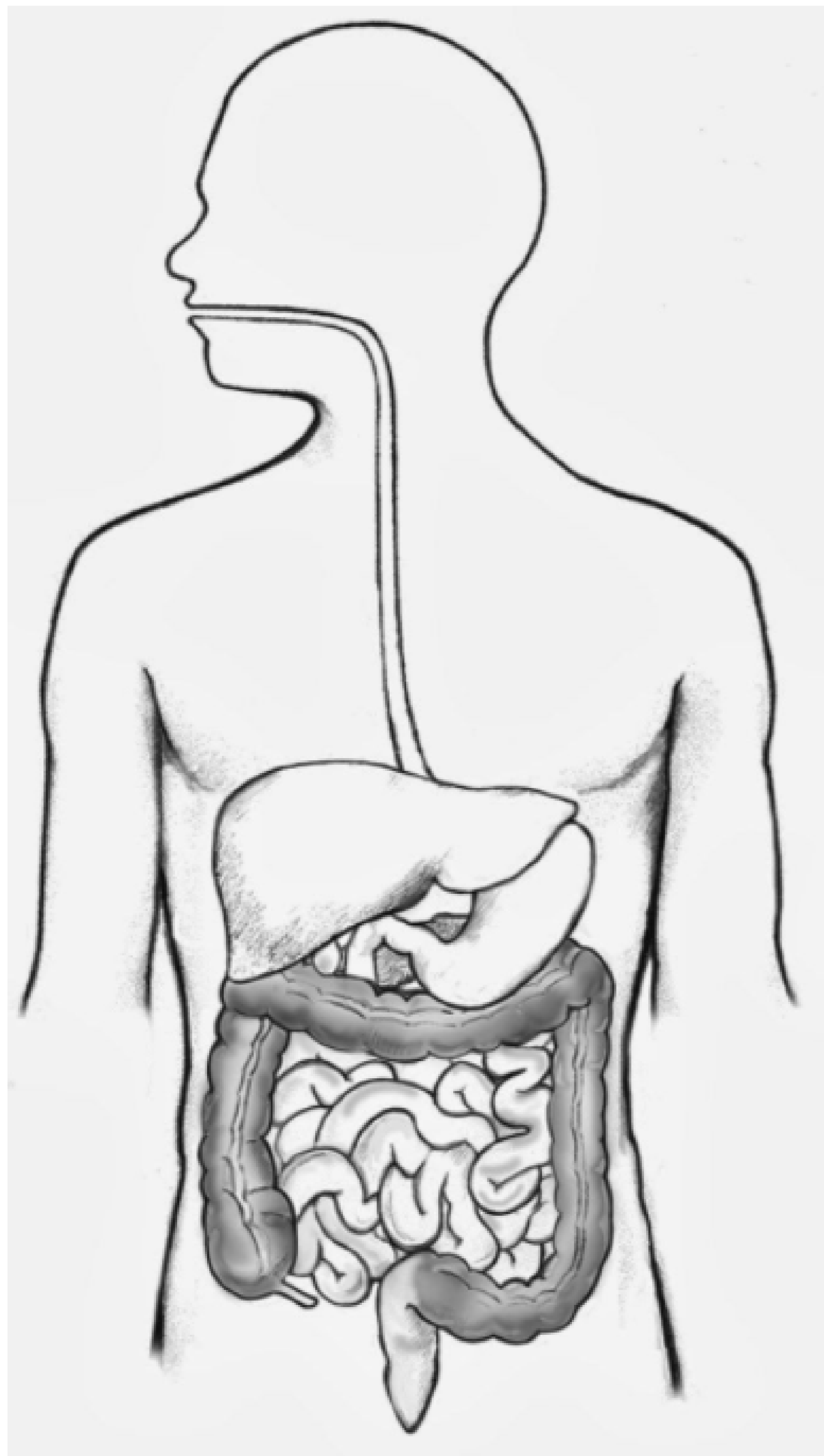
Q 5. In angiosperms, water is conducted through:

- (1) Sieve tubes and companion cells
- (2) Only vessels
- (3) Only tracheids
- (4) Both tracheids and vessels

**Passage - 3**

**5 Marks**

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In the human body, we have a pair of bean-shaped organ towards the back, just above the waist. The waste product urea is formed which is brought into the another organ through blood. The numerous tiny filters present in the bean-shaped organs clean the dirty blood by removing the waste products in the blood. The clean blood goes for circulation through another vein.

Q 1. What are the bean-shaped organ in the body called?

- (1) Pancreas
- (2) Kidney

- (3) Lungs
- (4) None of the above

Q 2. What is the other organ which carries urea from the bean-shaped organ?

- (1) Pancreas
- (2) Kidney
- (3) Lungs
- (4) None of the above

Q 3. Urea is carried away to the next organ by which artery?

- (1) Renal artery
- (2) Elastic artery
- (3) Muscular artery
- (4) None of the above

Q 4. What are the tiny filters present in the bean-shaped organ called?

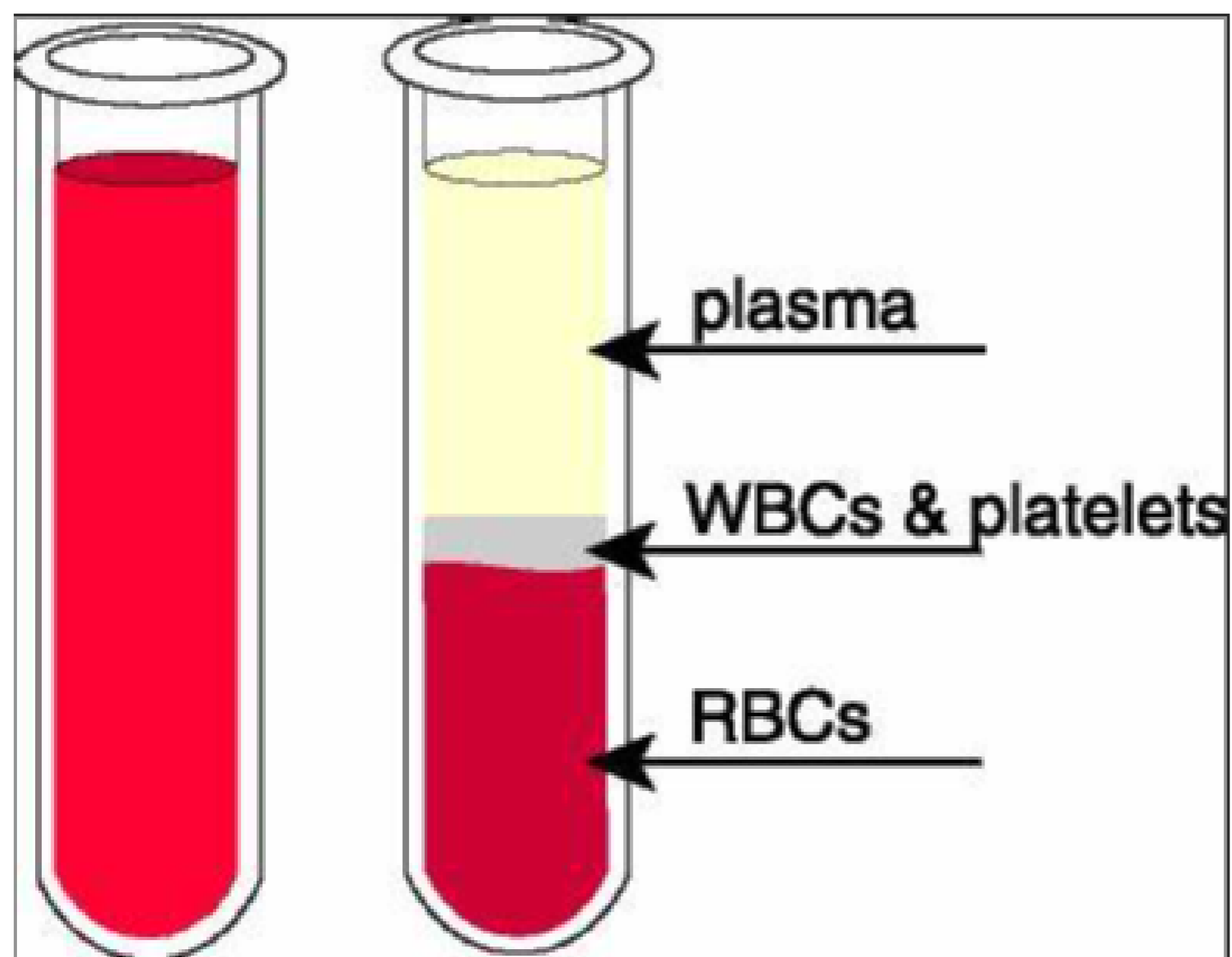
- (1) Nephrons
- (2) Bronchitis
- (3) Synapse
- (4) None of the above

Q 5. What is the vein called through which the clean blood goes for circulation after cleaning?

- (1) Pulmonary vein
  - (2) Renal vein
  - (3) Systemic vein
  - (4) None of the above
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## Passage - 4

5 Marks



Blood is a fluid connective tissue composed of 55% plasma and 45% formed elements including WBCs, RBCs, and platelets. Since these living cells are suspended in plasma, blood is known as a fluid connective tissue and not just fluid. Provides oxygen to the cells. Blood absorbs oxygen from the lungs and transports it to different cells of the body.

Q 1. Which of the following are components of blood?

- (1) Plasma
- (2) Blood cells and platelets
- (3) Gases and other substances
- (4) All of the above

Q 2. The life span of RBC is

- (1) 50 days
- (2) 75 days
- (3) 100 days
- (4) 120 days

Q 3. The life span of WBC is

- (1) Less than 14 days
- (2) Between 20 to 30 days
- (3) Between 2 to 3 months
- (4) More than 4 months

Q 4. What is the main function of RBC?

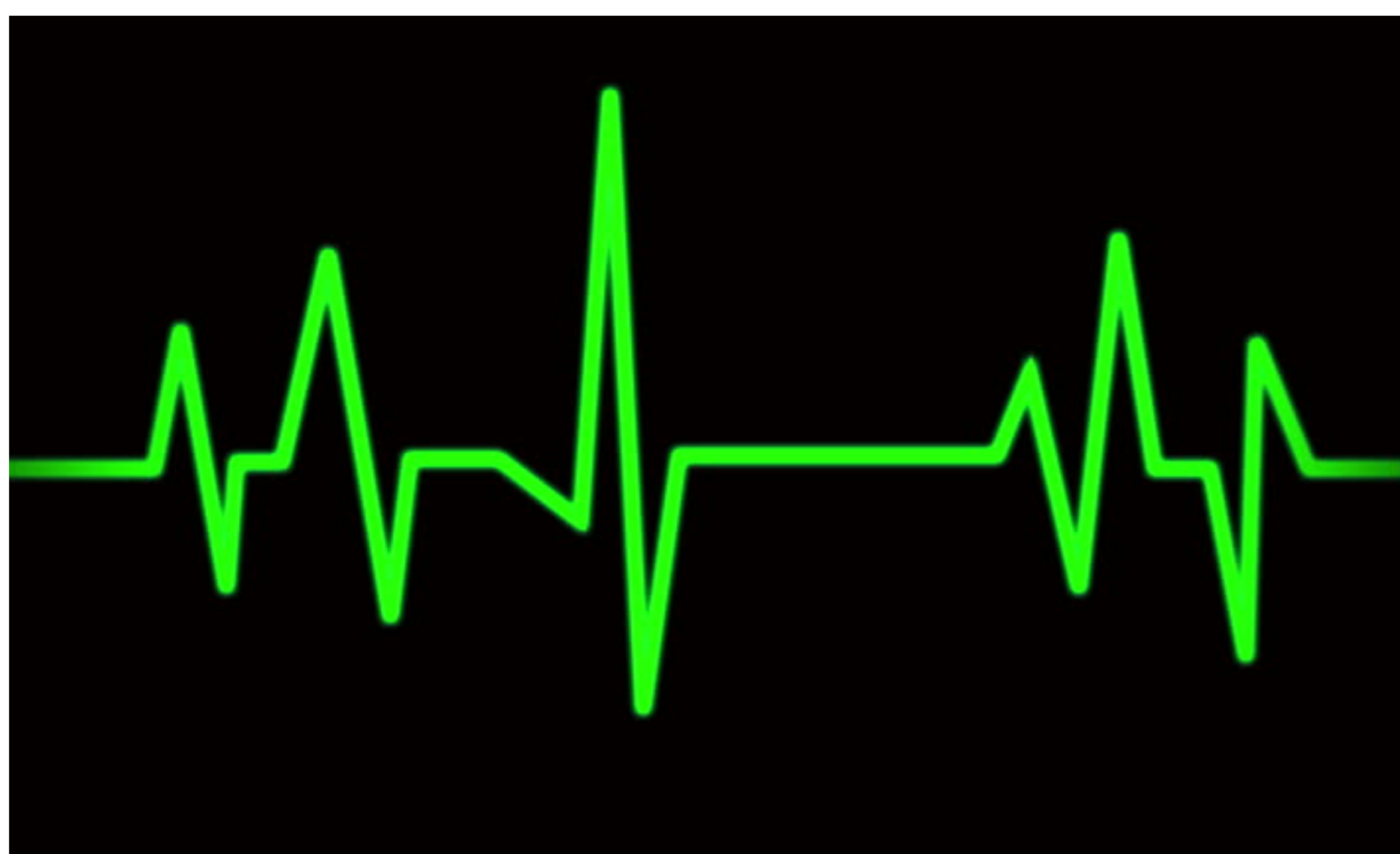
- (1) To fight diseases in the body
- (2) To carry oxygen to different parts of the body
- (3) To increase levels of WBC
- (4) To arrest bleeding

Q 5. Why is the colour of blood red?

- (1) Due to the presence of magnesium
- (2) Due to the presence of cytoglobin
- (3) Due to the presence of haemoglobin
- (4) All of the above

Passage - 5

5 Marks



The heart beats rhythmically throughout one's life. The periodic contraction and relaxation of the heart is called the heartbeat. The normal human heart-beat is 70-72 per minute. The sounds made by heart are the heartbeats, which

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can be heard more clearly and loudly using different methods. The human heart pumps about 5 litres of blood per minute.

Q 1. Name the instrument used by the doctor to measure heartbeat.

- (1) Thermometer
- (2) Stethoscope
- (3) Microscope
- (4) Periscope

Q 2. When heartbeat is decreased than normal, it is called as

- (1) Bradycardia
- (2) Tachycardia
- (3) Leucopenia
- (4) Cardiac arrest

Q 3. When heartbeat is increased than normal, it is called as

- (1) Bradycardia
- (2) Tachycardia
- (3) Leucopenia
- (4) Cardiac arrest

Q 4. A pacemaker is meant for

- (1) Transporting liver
  - (2) Transplanting heart
  - (3) Initiation of the heart beat
  - (4) Regulation of the blood flow
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Q 5. In case of cardiac arrest, what should be the most primary step?

- (1) Mouth to mouth respiration
  - (2) Cardian massage
  - (3) To call a doctor
  - (4) None of the above
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