9 Life Processes in Animals

Chapter Notes:

Key Life Processes

- Nutrition, respiration, excretion, reproduction – essential for survival.
- Animals obtain energy from food, broken down into simpler components during digestion.

Digestion in Humans

- Mouth: Mechanical digestion (chewing), saliva breaks starch into sugar.
- Oesophagus: Moves food to stomach using wave-like contractions (peristalsis).
- Stomach: Proteins digested; acid kills bacteria; mucus protects the lining.
- Small Intestine: 6 meters long, receives bile (from liver), pancreatic juice, and intestinal juice; nutrients absorbed into blood through villi.
- Large Intestine: Absorbs water and salts; undigested waste (stool) expelled through the anus (egestion).

Digestion in Animals

- Ruminants (e.g. cows): Chew cud (rumination).
- Birds: Use gizzard to grind food.
- Digestion method varies with diet and structure of digestive system.

Respiration in Humans

- Breathing: Physical process of inhaling (oxygen) and exhaling (CO_2).
- Respiration: Chemical process where glucose + oxygen → CO_2 + water + energy.
- Organs: Nostrils → Nasal passages → Windpipe → Lungs → Alveoli.
- Exchange of gases occurs in alveoli.

Respiration in Other Animals

- Birds, mammals, reptiles: Lungs.
- Fish: Gills extract oxygen from water.
- Frogs: Gills (tadpole), lungs & skin (adult).
- Earthworms: Moist skin.

Fill in the blanks

1. The process of breaking down complex food into simpler forms is called _____.
2. The finger-like projections in the small intestine are called _____.
3. The process of removing waste from the body is called _____.
4. _____ bring back partially digested food to chew again.
5. In humans, _____ are the site of exchange of gases.

Multiple Choice Questions (MCQs)

1. Which organ secretes bile?

(a) Pancreas (b) Liver
(c) Stomach (d) Small intestine

2. What is the function of villi?

(a) Absorb oxygen (b) Digest fat
(c) Absorb nutrients (d) Break down proteins

3. Which animals are called ruminants?

(a) Birds (b) Fish
(c) Cows (d) Frogs

4. What is the role of mucus in the stomach?

(a) Digest proteins (b) Protect stomach lining
(c) Absorb fat (d) Increase acidity

5. Which part of respiratory system exchanges gases?

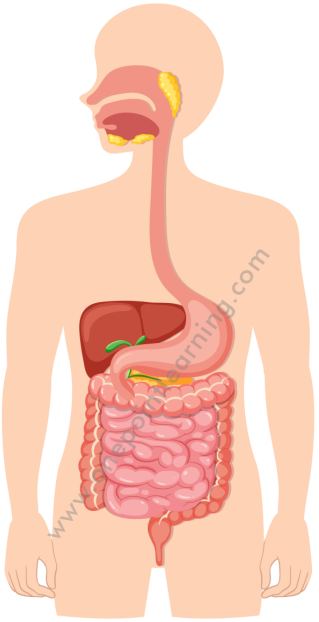
(a) Windpipe (b) Nostrils
(c) Alveoli (d) Diaphragm

True or False

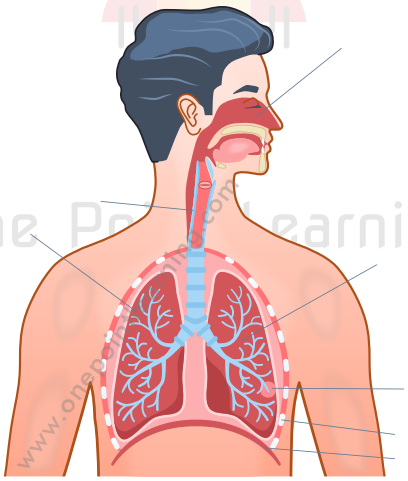
1. All animals digest food in the same way.
2. Breathing is a chemical process.
3. Saliva helps in breaking down starch.
4. Alveoli help in absorbing oxygen.
5. Birds use their skin to breathe.

Label the diagram and explain

Q1: Name the parts of the human alimentary canal.



Q2: Label the given diagram and describe the structure of the respiratory system in humans.



Question Answers

Q1. What is digestion?

Ans: _____

_____

Q2. What is the function of saliva in digestion?

Ans: _____

_____

Q3. What is peristalsis?

Ans: _____

_____

Q4. Name the digestive juices secreted by the stomach.

Ans: _____

_____

Q5. How does digestion occur in birds?

Ans: _____

_____

Q6. How does breathing differ from respiration?

Ans: _____

_____

_____

_____

Q7. Describe the experiment that shows the action of saliva on starch.

Ans: _____

_____

_____

Q8. What adaptations help frogs in respiration in different environments?

Ans: _____

_____

Q9. What is the function of the circulatory system in relation to respiration?

Ans: _____

_____

Q10: What is the role of the diaphragm in breathing?

Ans: _____

_____

Q11: How does gas exchange occur in alveoli?

Ans: _____

_____

Q12: What does the word equation for respiration look like?

Ans: _____

_____

Q13: How do fish breathe?

Ans: _____

_____

Q14: Why is fibre important in our diet?

Ans: _____

_____

Q15: Why is smoking harmful to the respiratory system?

Ans: _____

_____

_____

Answers

Fill in the Blanks

1. digestion 2. villi 3. egestion 4. Ruminants 5. alveoli

Multiple Choice Questions (MCQs)

1. (b) Liver 2. (c) Absorb nutrients 3. (c) Cows 4. (b) Protect stomach lining 5. (c) Alveoli

True or False

1. → False 2. → False 3. → True

4. → True 5. → False

Label diagram

A1.

A2. It consists of nostrils, nasal passages, windpipe (trachea), bronchi, lungs, and alveoli where gas exchange occurs.

Question Answers

Ans 1: Digestion is the process of breaking down complex food substances into simpler forms that can be absorbed by the body.

Ans 2: Saliva contains enzymes that break down starch into sugar and also moistens the food for easier swallowing.

Ans 3: Peristalsis is the wave-like movement of the food pipe that pushes food from the mouth to the stomach.

Ans 4: The stomach secretes gastric juice, which includes digestive enzymes, hydrochloric acid, and mucus.

Ans 5: Birds lack teeth. Their food is broken down in the gizzard using muscular contractions and grit (small stones) swallowed by them.

Ans 6: Respiration is the chemical process in which glucose is broken down using oxygen to release energy, with carbon dioxide and water as by-products.

Breathing is the physical process of inhaling and exhaling air, whereas respiration is the chemical process of producing energy from glucose and oxygen inside cells.

Ans 7: Take boiled rice in two test tubes. In one test tube (B), use chewed rice, and in the other (A), unchewed. Add iodine solution to both. Tube A turns blue-black, indicating starch. Tube B does not, because starch has been broken down by saliva into sugar.

Ans 8: Tadpoles breathe through gills in water. Adult frogs use lungs on land and skin for gas exchange in water, making them well-suited for both habitats.

Ans 9: It transports oxygen from the lungs and nutrients from the intestine to body cells and removes carbon dioxide and other wastes.

Ans 10: The diaphragm contracts and moves down during inhalation and moves up during exhalation, helping in the movement of air in and out of the lungs.

A11: Oxygen from the alveoli diffuses into the blood and carbon dioxide from the blood diffuses into the alveoli.

Ans 12: Glucose + Oxygen → Carbon dioxide + Water + Energy

Ans 13: Fish use gills to extract dissolved oxygen from water and release carbon dioxide.

Ans 14: Fibre helps in smooth movement of food through the digestive tract and prevents constipation.

Ans 15: Smoking damages the lungs, reduces oxygen intake, increases the risk of lung diseases like cancer, and harms others through passive smoking.