

LIFE PROCESSES EXCRETION

Question (1): How are wastes formed in the body?

Answer: Wastes are formed in the body as by-products of the metabolic activities in the body.

Question (2): Define excretion.

Answer: The removal of harmful and unwanted toxic waste products of metabolism from the body is known as excretion.

Question (3): Define osmoregulation.

Answer: The process by which the water content and the ion concentration is regulated and kept constant in the cells is known as osmoregulation.

Question (4): Name an organ that performs both excretion and osmoregulation.

Answer: Kidneys perform both excretion and osmoregulation.

Question (5): What is secretion? Give two examples.

Answer: Secretion is the production of useful chemical substances like hormones, enzymes or other molecules by glands, endocrine glands or specialized cells. For example: The liver secretes bile, the islets of langerhans secrete insulin, epithelial lining of the large intestine secrete mucus.

Question (6): What is egestion?

Answer: The expelling of undigested wastes from the body in the form of excreta is known as egestion.

Question (7): What are the three main groups of excretory wastes found in animals?

Answer:

- 1) Respiratory wastes
- 2) Nitrogenous wastes
- 3) Bile pigments

Question (8): Name the two respiratory waste products formed due to catabolism of food.

Answer: The two respiratory waste products formed due to catabolism of food are carbon dioxide and water.

Question (9): Mention four nitrogenous waste products produced by animals.

Answer: Four nitrogenous waste products produced by animals are:

- 1) urea
- 2) uric acid
- 3) ammonia
- 4) amino acids

Question (10): In higher animals, what does ammonia react with to produce urea?

Answer: Ammonia reacts with carbon dioxide in the liver to form a less toxic substance, urea which is periodically flushed out of the system.

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Question (11): Name two groups of animals in which amino acids are excreted out without undergoing any change.

Answer: Amino acids are excreted out without undergoing any change in:

- 1) Molluscs
- 2) Echinoderms

Question (12): Name two groups of animals which excrete uric acid in the form of a white paste or pellet.

Answer: Animals which excrete uric acid in the form of a white paste or pellet are:

- 1) Birds
- 2) Reptiles

Question (13): Name the organ that converts ammonia into urea in higher animals.

Answer: Ammonia is converted into urea in the liver.

Question (14): How are bile pigments formed?

Answer: Bile pigments are formed by the breaking down of haemoglobin present in the red blood cells.

Question (15): Name the organ that destroys worn out red blood cells.

Answer: Worn out red blood cells are destroyed in the liver.

Question (16): Name two bile pigments.

Answer: The two bile pigments are:

- 1) Bilirubin
- 2) Biliverdin

Question (17): Name the organelle in amoeba that performs excretion and osmoregulation.

Answer: Contractile vacuole in amoeba performs excretion and osmoregulation.

Question (18): What would happen to amoeba if osmoregulation did not take place?

Answer: If osmoregulation did not take place the organism would get flooded with water and burst.

Question (19): How does the cell membrane perform excretion in amoeba?

Answer: The cell membrane of Amoeba being semi permeable the carbon dioxide diffuses out of the cell membrane into the surrounding water. The cell membrane forms the general body surface of amoeba.

Question (20): Name two waste products excreted by the skin.

Answer: Two waste products excreted by the skin are:

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- 1) sweat
- 2) sebum

Question (21): Mention one difference between sebum and sweat.

Answer: Sebum is secreted by the sebaceous gland. Sweat is secreted by the sweat gland.

Question (22): Where are sebaceous glands found?

Answer: Sebaceous glands are found attached to the hair follicle in the skin of mammals.

Question (23): Mention three excretory substances found in sebum.

Answer: Three excretory substances found in sebum are:

- 1) Wax
- 2) Fatty acid
- 3) Sterols

Question (24): Name the principal excretory organ in man. What does it excrete?

Answer: The main excretory organ in man are the kidneys. They excrete urine.

Question (25): Why is the right kidney lower than the left?

Answer: The right kidney is lower than the left because of the presence of liver, in the abdominal cavity.

Question (26): Name three beverages that are diuretics.

Answer: Three beverages that are diuretics are:

- 1) coffee
- 2) tea
- 3) alcohol

Question (27): Differentiate between afferent arteriole and efferent arteriole.

Answer:

| AFFERENT ARTERIOLE | EFFERENT ARTERIOLE |
|---|---|
| Formed by the branching of the renal artery | Formed by the joining of the glomerular capillaries |
| Its lumen is twice as thick as the efferent arteriole | Its lumen is twice as narrow as that of the afferent arteriole |
| Brings oxygenated blood into the kidney | Carries oxygenated blood away from the Bowman's capsule |
| Brings blood which contains large amounts of water and nitrogenous metabolic wastes | It carries away blood that is relatively thicker and free of toxic wastes |
| Divides to form the glomerulus which is a knot inside the Bowman's capsule | Divides to form the vasa rectae enveloping the renal tubule |