

Life Processes Practice Paper 1 Q nA

Time: 1 hr

Marks: 30

Section-A Choose the Correct Option

5 x 1=5

1. The instant source of energy.

- a. Sucrose b. Fats c. Glucose d. Amino acids

2. Which part of the nephron allows the selective reabsorption of useful substances like glucose, amino acids, salts, and water into the blood capillaries?

- a. Tubule b. Glomerulus c. Bowman's capsule d. Ureter

3. Lipase acts on

- a. Amino acids b. Fats c. Carbohydrates d. Urea

4. What is common between the extensive network of blood vessels around the walls of alveoli and in the glomerulus of the nephron?

- a. Thick-walled arteries richly supplied with blood
b. Thin-walled veins poorly supplied with blood
c. Thick-walled capillaries poorly supplied with blood.
d. Thin-walled capillaries richly supplied with blood

5. **Assertion: The muscular walls of ventricles are thicker than auricles.**

Reason: This helps in preventing the backflow of blood.

- a. Both Assertion and Reason are true, and Reason is the correct explanation of the assertion.
b. Both Assertion and Reason are true, but Reason is not the correct explanation of the assertion.
c. Assertion is true, but Reason is false.
d. Assertion is false, but Reason is true.

Section-B Very Short Answer Questions

3 x 2=6

6. a. What forms the peripheral nervous system?

b. Which type of nervous system controls and regulates the functions of the internal organs of our body Involuntarily?

Answer:

- a. All the nerves of the body together make up the peripheral nervous system. It consists of three types of nerves that are spinal nerves, cranial nerves, and visceral nerves.
- b. The autonomic nervous system (ANS) is a self-governing nervous system. Its function is to control and regulate the functions of the internal organs of our body involuntarily.

7. State the significance of emulsification.

Answer:

The significance of the emulsification of fats is as follows:

Bile contains bile pigments and bile salts. Bile salts help break down the oil droplets into small globules forming a milky emulsion. This process is called emulsification. This process facilitates further digestion of fats. Steapsin is a pancreatic lipase that acts on emulsified fats and converts them to fatty acids and glycerol. This aids in the easy digestion of food.

8. How does the small intestine absorb digested food?

Answer:

The inner lining of the small intestine has numerous microscopic finger-like projections called villi which increase the surface area for absorption. The villi are richly supplied with blood vessels which transport the absorbed food to every cell of the body where it is utilized to obtain energy and repair old tissues.

Section C- Short Answer Questions

2 x 3 = 6

9. Differentiate between aerobic and anaerobic respiration.

Answer: (Any three)

Aerobic respiration	Anaerobic respiration
1. Occurs in the presence of oxygen.	1. Occurs in the absence of oxygen.

2. Involves gaseous exchange between the organism and its environment.	2. Exchange of gases is absent.
3. Takes place in cytoplasm and mitochondria.	3. It occurs only in cytoplasm.
4. It always releases carbon dioxide and water.	4. End products vary. (Ethanol and carbon dioxide / Lactic acid)
5. It yields 38 ATPs.	5. It yields only 2 ATPs

10. Name the end products formed during:

- (i) Oxidation of glucose in the muscles**
- (ii) Oxidation of glucose in body cells**
- (iii) Breakdown of glucose anaerobically.**

Answer:

- a. Oxidation of glucose in the muscles occurs in the absence of oxygen. The end products formed are lactic acid and ATP.
- b. Oxidation of glucose in body cells occurs in the mitochondria in the presence of oxygen. The end products are carbon dioxide, water, and ATP.
- c. Breakdown of glucose anaerobically in yeast produces Ethanol, carbon dioxide, and ATP.

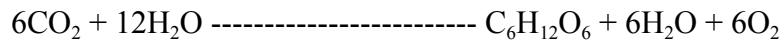
Section D- Short Answer Questions

1 x 5 = 5

11. Define photosynthesis. Write the equation and explain the steps. (5 Marks)

Photosynthesis is the process in which green plants use carbon dioxide and water to prepare food in the presence of sunlight. Oxygen gas is liberated as a by-product of photosynthesis. The prepared food is a carbohydrate that is stored as starch.

Chlorophyll



Sunlight

Photosynthesis takes place in three steps. They are;

1. The chlorophyll absorbs light energy from the sun.
2. This light energy is converted into chemical energy to split a water molecule into hydrogen and oxygen.
3. Hydrogen from the splitting of water molecules is used to reduce carbon dioxide to form carbohydrates.

SECTION - E Case Study Questions

2 x 4= 8

12. Read the following and answer any four questions (i) to (v)

Heterotrophic nutrition is a mode of nutrition in which organisms depend on outside sources for organic food. Such organisms are called heterotrophs. Heterotrophic nutrition is of three types: saprophytic, parasitic, and holozoic nutrition.

(i) Identify the group of organisms in which the food material is broken down outside the body and absorbed.

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|------------------------------------|---------------------------------|
| (a) Mushroom, green plants, Amoeba | (b) Yeast, mushroom, bread mold |
| (c) Paramecium, Amoeba, Cuscuta | (d) Cuscuta, lice, tapeworm |

(ii) Which of the following is a parasite?

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|-----------|------------|------------|---------------|
| (a) Yeast | (b) Taenia | (c) Amoeba | (d) Earthworm |
|-----------|------------|------------|---------------|

(iii) Which of the following is an example of a saprotroph?

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|-----------|--------------|------------|----------------|
| (a) Grass | (b) Mushroom | (c) Amoeba | (d) Paramecium |
|-----------|--------------|------------|----------------|

(iv) Heterotrophic nutrition involves

- (a) production of simple sugar from inorganic compounds
- (b) utilization of chemical energy to prepare food
- (c) utilization of energy obtained by plants
- (d) all of these.

(v) In Paramecium, food enters the body through

- | | | | |
|-----------|-----------------|-----------|----------------|
| (a) mouth | (b) pseudopodia | (c) cilia | (d) cytostome. |
|-----------|-----------------|-----------|----------------|

13. Read the following and answer the questions.

In many biological processes, water is an important chemical, required as the solvent. It is needed as raw material in photosynthesis, as the main substance from which plants evolve oxygen and provide hydrogen for synthesizing carbohydrates. Water helps translocate chemical substances and minerals. Osmosis is a special type of transport of water molecules that occurs through a semipermeable membrane. It is the movement of solvent from the region of higher diffusion pressure to the lower diffusion pressure across a semipermeable membrane. There are two types of osmosis - endosmosis and exosmosis. Endosmosis is the osmotic entry of water into a cell, organ, or system. Exosmosis is the osmotic withdrawal of water from a cell, organ, or system.

(i) A flowering plant is grown in an earthen pot. Urea is added in high amounts to make the plant grow faster, but after some time the plant dies, due to

- (a) exosmosis (b) endosmosis (c) water logging (d) suffocation.

(ii) A slice of sugar beet placed in a concentrated salt solution would

- (a) show no change
(b) **lose water and become flaccid initially**
(c) absorb small quantity of water
(d) become swollen.

(iii) The process of diffusion is involved in

- (a) respiration (b) photosynthesis (c) transpiration (d) **all of these.**

(iv) The cytoplasm of a plant cell is surrounded by a cell wall and a cell membrane. The transport of substances is mainly across the cell membrane, because

- (a) cell membrane is impermeable
(b) **cell membrane is selectively permeable**
(c) cell membrane is fully permeable
(d) cell wall is impermeable.