

First Term examination 2025

Answer key

STD 5 Basic Science

1. Food Chains and Habitats

- a) Correct Food Chain:
 - The correct food chain is B. Grass → Grasshopper → Frog → Snake. This shows a logical flow where a producer (grass) is eaten by a primary consumer (grasshopper), which is then eaten by a secondary consumer (frog), and finally by a tertiary consumer (snake).
- b) Impact of Decreased Rat Snakes:
 - In the food chain

Paddy → Rat → Rat snake → Eagle, if the number of Indian rat snakes decreases, the number of rats will increase. This is because the rats' main predator, the rat snake, is no longer there to control their population. Consequently, the increased number of rats will lead to the destruction of the paddy crop.

- c) Food Web:
 - A food web would show the interconnected relationships between the given organisms. The arrows show the flow of energy:
 - Grass is eaten by a Grasshopper and a Worm.
 - Worm is eaten by a Hen.
 - Grasshopper is eaten by a Frog and a Hen.
 - Frog is eaten by a Snake.
 - Hen is eaten by a Fox.
 - Snake is eaten by a Vulture and a Fox.

2. Habitats and Plant Pigments

- a) Habitat of Organisms:
 - Camel: Desert.
 - Tiger: Forest.
 - Polar bear: Polar region.
 - Dolphin: Ocean.

- b) Invasive Organism:
 - The image shows a Piranha fish . This is an invasive organism.
 - If this invasive organism reaches a local water source, it could lead to several negative changes. Since it is a predator, it would likely prey on smaller native fish, leading to a decrease in the population of native aquatic organisms. This would disrupt the local food chain and cause a

decline in the overall biodiversity of the water resource.

- c) Correct Pigment Pairs:
 - The correct pairs are:
 - 1. Green - c. Chlorophyll
 - 2. Red - d. Anthocyanin
 - 3. Orange - b. Carotene
 - 4. Yellow - a. Xanthophyll
 - Therefore, the correct option is C. 1-c, 2-d, 3-b, 4-a

3. Gaseous Exchange in Plants

- a) Gases in the Figure:
 - In the figure showing gaseous exchange at night, 'a' represents

Carbon dioxide and 'b' represents Oxygen. During the night, plants only respire, taking in oxygen and releasing carbon dioxide, unlike the daytime where photosynthesis occurs and the opposite happens.

- b) Vanda Plant:
 - The plant is a parasitic plant. It is called

Vanda. It prepares its own food but absorbs water and minerals from the host plant.

- c) Correct Statements:
 - The correct set of statements is

a) ii, iii, iv Correct.

- ii) Carbon dioxide formed in plants as a result of respiration is utilized for photosynthesis during the daytime.
 - iii) Plants utilize atmospheric carbon dioxide for photosynthesis.
 - iv) Gaseous exchange in plants occurs through minute pores called stomata.
 - Statement i is incorrect because not all organisms use both oxygen and carbon dioxide for respiration; some organisms are anaerobic and don't require oxygen.
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4. Diseases and Health

(Answer either 4A or 4B)

4 (A)

- a) Organism that spreads dengue fever:

- The organism that spreads dengue fever is the

mosquito. The news report mentions the disease is spread by an organism that lays eggs in water in discarded plastic bags.

- b) Measures to prevent the spread of dengue:

- Two measures to prevent the spread of dengue-carrying mosquitoes are:

1. Avoid water stagnation in containers like pots and plastic bags.
2. Dispose of garbage properly to prevent water from collecting in them.
3. Clean water containers like tanks and pots regularly.

- c) Complete the table:

- a. Non-communicable diseases

(Heart disease, Cancer, Diabetes).

- b. Communicable diseases

(Conjunctivitis, Jaundice).

- c. Communicable diseases

(Jaundice, Conjunctivitis).

OR

4 (B)

- a) Complete the table:

- 1) Through soil:

Tetanus.

- 2) Through air:

Tuberculosis.

- 3) Through food and water:

Typhoid, Cholera, Dysentery.

- 4) Through physical contact:

Leprosy, Scabies.

- b) Other measures to prevent diseases:
 - Four other measures to prevent diseases are:
 1. Drink boiled and filtered water.
 2. Eat fresh and hygienic food.
 3. Maintain a clean environment around the house.
 4. Keep food covered to prevent contamination by flies.
- c) Statement on Bud Rot:
 - The correct option is C. Statement and reason are correct

. The statement that bud rot spreads quickly to coconut trees is true. The reason is also correct because plants, just like animals, are susceptible to infectious diseases.

5. Hygiene and Microorganisms

- a) Vaccination:
 - I agree with the statement that vaccinations should be taken even when a person is not ill.
 - Reason: Vaccines work by preparing the body's immune system to fight a specific disease before a person is exposed to it. It prevents a person from getting sick in the future by building immunity.
 - b) Useful Microorganisms:
 - The correct option is B. Situation 1, 3
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- Situation 1: Rice batter ferments. This is a useful process carried out by microorganisms (like yeast and bacteria).
 - Situation 3: Microorganisms decompose organic remains and add nutrients to the soil. This is a key part of the nutrient cycle and is essential for healthy soil.

- Situation 2 is done with soap and water, not microorganisms. Situation 4 is a harmful activity of microorganisms, not a useful one.
 - c) Poster on 'Environmental Hygiene':
 - * **Clean Environment, Healthy Life!**
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 - Tips for Environmental Hygiene:
 - Don't throw garbage in public places.
 - Use dustbins for waste disposal.
 - Keep your surroundings clean.
 - Prevent water stagnation to avoid mosquito breeding.
 - Reduce, Reuse, Recycle.
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6. Water

(Answer either 6A or 6B)

6 (A)

- a) Functions of Water in Plants:
 - Two functions of water in plants are:
 1. Transport of nutrients from the soil to different parts of the plant.
 2. Water is a main component of photosynthesis (the process of making food).
 3. It helps the plant maintain its shape and firmness.
- b) Water Test Result:
 - No, this water cannot be used for drinking.
 - Reason: The test results show that the water has an odor and contains bacteria. The presence of bacteria, especially, makes the water unsafe for drinking as it can cause serious diseases.
- c) Correct Statement:
 - The correct statement is D. The brain contains the most water in the human body

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OR

6 (B)

- a) Water Purification Stages in order:

- The stages of water purification are:
 1. Filtration: It filters large impurities.
 2. Sedimentation: It permits impurities to settle at the bottom.
 3. Advanced Filtration: It filters using different layered sieves.
 4. Disinfection: It destroys pathogens (disease-causing germs).
- b) Situations where floating ability is used:
 - Besides a raft, the ability of objects to float on water is used in:
 1. Ships and boats.
 2. Life jackets and lifebuoys.
- c) Water Supply System:
 - The correct statement is A. Statement 1 is true, Statement 2 is false
 - Statement 1 is true because water from rivers is always purified before being supplied to homes to make it safe for drinking and other uses.
 - Statement 2 is false because water from rivers is not pumped directly to homes without any purification process