

Nutrition in Plants and Animals

Science · Class 7 · Topic-wise Practice Worksheet

TIME 45 minutes	QUESTIONS 18	TOTAL MARKS 24	MAX. SCORE ___ / 24
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Name: _____ Class/Sec: _____ Date: _____

INSTRUCTIONS

- There are **18 questions** in this worksheet. All questions are compulsory.
- Each question has four options (A), (B), (C) and (D). Exactly **one** option is correct.
- Questions 1–15 carry **1 mark** each. Questions 16–18 (Achievers Section) carry **3 marks** each.
- There is no negative marking. Study every diagram and table carefully.

Section A — Scientific Reasoning

Q1–Q8 · 1 mark each

- Organisms that make their own food are called _____.
 (A) Heterotrophs (B) Parasites
 (C) Saprotrophs (D) Autotrophs
- Cuscuta (amarbel) grows on other plants and takes food from them. It is a _____.
 (A) Parasite (B) Saprotroph
 (C) Autotroph (D) Insectivore
- Fungi such as bread mould feed on dead and decaying matter. Such organisms are called _____.
 (A) Parasites (B) Saprotrophs
 (C) Autotrophs (D) Insectivores
- The pitcher plant traps insects mainly to obtain _____.
 (A) Water (B) Energy
 (C) Nitrogen (D) Carbon dioxide
- The bacterium **Rhizobium** lives in the root nodules of leguminous plants and _____.
 (A) Causes disease in the plant (B) Makes food for itself only
 (C) Absorbs water for the plant (D) Fixes atmospheric nitrogen into a usable form
- In human beings, digestion of food is completed and absorbed mainly in the _____.
 (A) Small intestine (B) Stomach
 (C) Large intestine (D) Oesophagus
- The finger-like projections in the inner wall of the small intestine are called _____.
 (A) Cilia (B) Villi
 (C) Stomata (D) Nodules
- Ruminants such as cows have a special sac called the _____ where grass is stored and partly digested.
 (A) Crop (B) Gizzard
 (C) Rumen (D) Caecum

9. In the table below, which row is **incorrectly** matched?

Row	Organism	Mode of nutrition
(A)	Mushroom	Saprotrophic
(B)	Cuscuta	Parasitic
(C)	Green algae	Heterotrophic
(D)	Pitcher plant	Insectivorous

Table 9.1 — Modes of nutrition

- (A) Row (A)
- (B) Row (B)
- (C) Row (C)
- (D) Row (D)

10. A leaf from a destarched plant is partly covered with black paper and the plant is left in sunlight all day. When the leaf is tested with iodine, the covered part stays pale. What does this show?

- (A) Chlorophyll is not needed
- (B) Water is not needed
- (C) Carbon dioxide is not needed
- (D) Sunlight is necessary for the leaf to make starch

11. Why must a plant be **destarched** by keeping it in the dark before a starch experiment?

- (A) To remove the starch already stored, so that any starch found later must be newly made
- (B) To make the leaves greener
- (C) To make the plant absorb more water
- (D) To kill the chlorophyll

12. Which of these is the correct word equation for photosynthesis?

- (A) Carbon dioxide + water $\rightarrow$ glucose + oxygen
(B) Glucose + oxygen $\rightarrow$ carbon dioxide + water
(C) Oxygen + water $\rightarrow$ glucose + carbon dioxide
(D) Glucose + water $\rightarrow$ oxygen + carbon dioxide

13. Farmers often grow pulses in a field after harvesting a cereal crop. Why?

- (A) Pulses need less water
- (B) Pulses have Rhizobium in their root nodules, which restores nitrogen to the soil
- (C) Pulses grow faster
- (D) Pulses keep insects away

14. Why does a cow chew its cud long after it has finished grazing?

- (A) Because it is still hungry
- (B) Because it cannot swallow properly
- (C) Because grass is swallowed quickly into the rumen and is later returned to the mouth to be chewed thoroughly
- (D) Because it has no teeth

15. Amoeba takes in food by surrounding it with finger-like extensions. These extensions are called _____.

- (A) Cilia (B) Villi
(C) Flagella (D) Pseudopodia

16. Consider the following statements.

- (i) All plants are autotrophic.
- (ii) Photosynthesis takes place only in the leaves.
- (iii) Insectivorous plants also carry out photosynthesis.

Which of the statements is/are correct?

- (A) (i) only
- (B) (iii) only
- (C) (i) and (ii) only
- (D) (ii) and (iii) only

17. A green plant is kept in a sealed transparent jar with a small amount of carbon dioxide-absorbing chemical, and left in sunlight. After a day, its leaves test negative for starch. What does this show?

- (A) Carbon dioxide is necessary for photosynthesis
- (B) Sunlight is not needed
- (C) Chlorophyll has been destroyed
- (D) The plant has died

18. Match each item in Column I with its correct role in Column II.

Column I	Column II
(P) Saliva	(1) Emulsifies fats
(Q) Bile	(2) Begins the digestion of starch
(R) Villi	(3) Absorb digested food into the blood
(S) Rumen	(4) Stores partly digested grass as cud

Table 18.1

- (A) P-1, Q-2, R-4, S-3
- (B) P-2, Q-1, R-3, S-4
- (C) P-2, Q-3, R-1, S-4
- (D) P-3, Q-1, R-2, S-4

Answer Key

1	D	2	A	3	B	4	C	5	D
6	A	7	B	8	C	9	C	10	D
11	A	12	A	13	B	14	C	15	D
16	B	17	A	18	B				

Solutions

1. Answer: (D) Autotrophs

Autotrophs make their own food. Green plants do this by photosynthesis, using carbon dioxide, water and sunlight.

2. Answer: (A) Parasite

Cuscuta has no chlorophyll of its own, so it takes ready-made food from the host plant. An organism that lives on another and takes food from it is a **parasite**.

3. Answer: (B) Saprotrophs

Saprotrophs secrete digestive juices onto dead organic matter and then absorb the dissolved food. Mushrooms and bread mould feed this way.

4. Answer: (C) Nitrogen

Pitcher plants grow in marshy soil poor in **nitrogen**. They still photosynthesise for energy, but digest insects to get the nitrogen they need for proteins.

5. Answer: (D) Fixes atmospheric nitrogen into a usable form

Rhizobium **fixes atmospheric nitrogen** into compounds the plant can use, while the plant supplies it with food and shelter. This mutually helpful arrangement is called symbiosis, and it is why pulses enrich the soil.

6. Answer: (A) Small intestine

The **small intestine** receives juices from the liver and pancreas, completes digestion and absorbs the digested food through finger-like villi in its wall.

7. Answer: (B) Villi

Villi greatly increase the surface area of the small intestine, so far more digested food can be absorbed into the blood.

8. Answer: (C) Rumen

Grass is swallowed quickly and stored in the **rumen**, where it is partly digested into cud. Later the cud is returned to the mouth and chewed thoroughly — this is called rumination.

9. Answer: (C) Row (C)

Green algae contain chlorophyll and make their own food by photosynthesis, so they are **autotrophic**, not heterotrophic. The other three rows are correct.

10. Answer: (D) Sunlight is necessary for the leaf to make starch

Iodine turns blue-black wherever starch is present. Both parts of the leaf had the same chlorophyll, air and water; only the light differed. Since only the lit part made starch, **sunlight is necessary for the leaf to make starch**.

11. Answer: (A) To remove the starch already stored, so that any starch found later must be newly made

If starch were already present, a positive iodine test would prove nothing. Destarching **removes the starch already stored, so any starch found afterwards must have been newly made** during the experiment.

12. Answer: (A) Carbon dioxide + water → glucose + oxygen

In the presence of sunlight and chlorophyll, **carbon dioxide + water → glucose + oxygen**. The second option is the equation for respiration, which is the reverse process.

13. Answer: (B) Pulses have Rhizobium in their root nodules, which restores nitrogen to the soil

Cereals use up the nitrogen compounds in the soil. Pulses carry **Rhizobium in their root nodules, which fixes atmospheric nitrogen and restores it to the soil**, so the next crop grows well with less fertiliser.

14. Answer: (C) Because grass is swallowed quickly into the rumen and is later returned to the mouth to be chewed thoroughly

Cellulose in grass is very hard to digest. The cow grazes fast and stores the grass in the rumen, where it softens into cud. The cud is then **returned to the mouth and chewed thoroughly** at leisure, which is safer than lingering in the open.

15. Answer: (D) Pseudopodia

Amoeba pushes out temporary extensions of its body called **pseudopodia** ('false feet'), which surround the food particle and enclose it in a food vacuole.

16. Answer: (B) (iii) only

Statement (i) is false — Cuscuta has no chlorophyll and is a parasite. Statement (ii) is false; any green part can photosynthesise, and in a cactus it is chiefly the stem. Statement (iii) is true; insectivorous plants are green and make their own food, trapping insects only for nitrogen. Hence **(iii) only**.

17. Answer: (A) Carbon dioxide is necessary for photosynthesis

The plant had light, water and chlorophyll — only the carbon dioxide had been removed by the chemical. Since no starch was made, **carbon dioxide is necessary for photosynthesis**. A control jar without the chemical would show starch, completing the experiment.

18. Answer: (B) P-2, Q-1, R-3, S-4

Saliva **begins the digestion of starch** in the mouth (2). Bile from the liver **emulsifies fats**, breaking them into tiny droplets (1). Villi **absorb digested food into the blood** (3). The rumen **stores partly digested grass as cud** (4). Hence P-2, Q-1, R-3, S-4.