Unit 17 · Introduction to Biology

WORKSHEET

Full marks 34

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 34

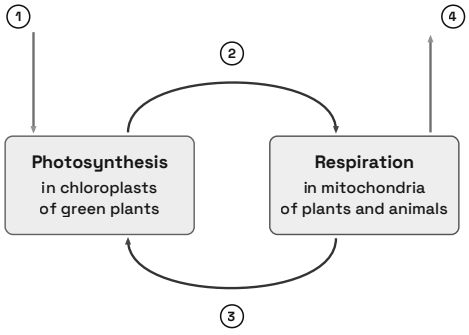
1 Key words [4]

Match each branch of biology in column A with what it studies in column B. Two items in column B are not needed. Each match carries 0.5 mark.

Column A		Column B
1. morphology	☐	**a.** tissues
2. histology	☐	**b.** spiders
3. karyology	☐	**c.** mollusks
4. limnology	☐	**d.** how diseases spread through populations, and how to control them
5. herpetology	☐	**e.** fresh water and what lives in it
6. malacology	☐	**f.** the external form of organisms
7. euthenics	☐	**g.** improving the human race by controlling who may have children
8. epidemiology	☐	**h.** the nucleus, especially its chromosomes
		i. improving human well-being through better living conditions
		j. reptiles and amphibians

2 Label the diagram [2]

The diagram shows the two great chemical reactions of life. Write what belongs in place of 1 to 4. Each carries 0.5 mark.



1. _____ **2.** _____

3. _____ **4.** _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. What does ichthyology deal with? [1]

a. fruit **b.** heart
c. disease **d.** fish

ii. Who is called the father of botany? [1]

a. Aristotle **b.** Theophrastus
c. Hippocrates **d.** Carl Linnaeus

iii. If a scientist is studying the internal structures of plants, which branch of biology is she likely specializing in? [1]

a. morphology **b.** anatomy
c. physiology **d.** histology

iv. Which of these tools used in biology relies on physical principles? [1]

a. X-ray diffraction **b.** DNA sequencing
c. gene editing **d.** microarray analysis

v. Which area of agriculture involves the role of earthworms in improving the soil? [1]

a. apiculture **b.** horticulture
c. agronomy **d.** vermiculture

4 Very short answers [3]

Write very short answers to the following questions.

a. What do the Greek words *bios* and *logos* in "biology" mean? [1]

b. What is a vector? Give one example. [1]

c. A scientist studies how hunger or hormones affect what people do in their societies. Which two subjects is she joining? [1]

5 Short answers [9]

Write short answers to the following questions.

a. Explain the difference between anatomy and physiology. [2]

b. What role does mathematics play in biology? **[2]**

c. Mendel counted 787 tall and 277 dwarf pea plants among his offspring. Work out the ratio, and say what this shows about the relation of biology with mathematics. **[2]**

d. How does geography influence the distribution of plants and animals? **[3]**

6 Long answers **[8]**

Write long answers to the following questions.

a. Describe how biology is related to chemistry. **[4]**

b. Describe how biology helps agriculture, with four examples. **[4]**

7 Think **[3]**

Exercise question 5 asks why biologists work on problems such as the dangers of radiation and hunger. Answer it with one example of each, and say what the aim of such work is.

8 Activity: Biology from breakfast to bedtime (not marked)

For one day, notice where biology touches your life. For each moment, write the living things involved and the branch of biology that studies them.

Moment of the day	Living things involved	Branch of biology
breakfast		
a medicine or a vaccine		
clothes you wear		
the garden or a field you pass		
an animal you see		

Which of the moments needed more than one branch?