GrindSpot
ONLINE GRINDS PLATFORM

LEAVING CERT 2027

LEAVING CERT BIOLOGY

Exam Ready

Dyslexia friendly
large, clear text · room to write

Ordinary Level · New course · Workbook A

Built on the new Leaving Cert Biology course and the SEC sample papers, with 9 years of past papers: what comes up, how it's marked, and the practice to nail it.

- **9** years of past papers, topic by topic
- **55** topic drills with model answers
- **1** full practice paper in the new 2027 format
- ✓ every answer explained, with marks for the paper



Know what's coming.
Walk in ready.

Original GrindSpot material written in the style of the Leaving Certificate examination. Not an official SEC paper.

What comes up

2017 to 2026

All 147 questions of the old-course Ordinary Level papers, 2017–2026 (no exam in 2020): a guide to what biology examiners like to ask. The 2027 exam is on the new course; the boxes below say what has gone. We counted a topic for a question when at least one of its parts could not be answered without it.

	2017	2018	2019	2021	2022	2023	2024	2025	2026	Years
Cells, microscopy & membranes	2	1	2	2	1	3	2	3	2	9/9
Ecology	2	1	2	2	2	2	2	3	2	9/9
Microorganisms & classification	1	1	2	2	3	2	3	2	2	9/9
Plant structure & responses	2	3	2	1	2	1	2	3	2	9/9
Biomolecules & food	1	2	2	2	3	1	1	2	1	9/9
Nervous system & senses	2	1	1	3	2	2	1	2	1	9/9
Plant reproduction	–	2	1	2	3	1	2	2	1	8/9
Enzymes	1	2	1	1	1	1	2	2	2	9/9
Digestion & diet	1	2	1	3	2	1	1	–	1	8/9
Cell division & cancer	2	–	1	1	1	2	2	1	1	8/9
Genetics & inheritance	1	1	1	2	1	1	1	2	1	9/9
Heart, blood & circulation	1	1	1	1	1	1	1	1	3	9/9
Immunity & disease	–	1	–	1	1	1	3	2	2	7/9
Respiration	2	1	1	1	2	1	1	1	1	9/9
Excretion & homeostasis	1	1	1	3	1	1	1	–	1	8/9
Hormones	1	–	1	1	2	1	1	2	1	8/9
Human reproduction	1	1	1	1	2	1	1	1	1	9/9
Photosynthesis	1	1	2	1	1	1	1	1	1	9/9
Breathing	1	1	–	1	1	1	1	1	1	8/9
DNA & protein synthesis	–	1	–	1	1	2	–	2	1	6/9
Skeleton & muscles	–	1	1	1	1	1	1	1	1	8/9
DNA technology	1	–	–	–	3	–	1	1	1	5/9
Evolution & variation	1	–	1	–	1	–	1	1	1	6/9

Darker = more questions. Source: State Examinations Commission papers, 2017 to 2026, read and grouped by GrindSpot. Every question we counted is listed at **grindspot.ie/exam-trends**. A guide to what has come up, not a prediction of what will.

The four biggest topics. Cells, ecology, microorganisms and plant structure: 18 questions each. 12 of the 23 topics came up in all nine papers.

Experiments every year. 27 experiment questions; enzymes, cells and osmosis, and food tests came up most.

How science works. 5 questions were only about hypotheses, controls and data: a whole strand on the new course.

What has gone. 17 had a part on the eye, ear, tropisms, vegetative propagation or tissue culture (plant responses stay, in less detail).

TOPIC 8

Ecology & microorganisms

Worked answers →

In the real exam

34 questions of 147 (23%), 1 to 5 a paper, 2017 to 2026.



Fionn's tip: In a habitat study say what you measured, the equipment and how you kept it fair (random quadrats, repeats). Energy is lost at every step of a food chain, so chains are short.

1. In a woodland: oak tree → caterpillars → blue tit → sparrowhawk. Name the producer, a primary consumer, and a predator with its prey. Sketch the pyramid of numbers for this chain. Why does it not have a wide base?

2. Describe how to set up a pitfall trap, and why it must be checked often. Name one abiotic factor you could measure in a habitat, and the instrument you would use.

3. Name two biotic and two abiotic factors that limit the number of red deer that Killarney National Park can support. What is this number called?

Question 1 is compulsory.

Question 1 (50 marks)

(a) (i) State two characteristics of all living things.
(ii) A virus can only make copies of itself inside a living cell. Use this to explain why some biologists do not describe viruses as living.
(iii) Which one of these belongs to the domain Bacteria? Tick (✓) one box.

☐ mushroom ☐ *E. coli* ☐ amoeba ☐ moss

(b) A student looks at cheek cells with a light microscope. The eyepiece lens is ×10 and the objective lens is ×40.
(i) Work out the total magnification.
(ii) Name a stain used for cheek cells.
(iii) Name one structure you would see in a cheek cell and give its function.
(iv) Name a type of microscope that shows far more detail than a light microscope.

(c) A student tested porridge oats mixed with water. The results are in the table.

Test	Colour at the start	Colour with the oats
Iodine solution	yellow-brown	blue-black
Benedict's solution	blue	blue
Biuret solution	blue	violet

(i) Which food molecules are present in the oats, and which one is not?
(ii) The student also did each test on a tube of water only. Why?
(iii) Benedict's test needs one extra step that the other two tests do not. What is it?

(d) (i) Complete the table to compare nerves and hormones.

	Nerves	Hormones
How fast it works		
How the message travels		
How long the effect lasts		

(ii) Name the hormone, made by the pancreas, that lowers the level of glucose in the blood.
(iii) What is meant by *homeostasis*?

Each part shows a model answer and, below it, how its marks are given: the marks for each sub-part and what earns them. This is our guide in the style of the SEC's biology marking schemes, not an official scheme: the SEC has not published one for the new course. Marks go to correct key points; other correct answers are accepted. In calculations, show your working: it can earn marks even if the answer is wrong.

Question 1 (50 marks)

(a)

(i) Any two: nutrition, respiration, excretion, response, reproduction, growth, made of cells.

(ii) A virus cannot reproduce, feed or respire on its own: it has no cells and does nothing outside a host cell.

(iii) *E. coli* (a bacterium).

E. coli

10 marks · (i) 4: 2 for each characteristic · (ii) 3: cannot reproduce (or carry out life processes) on its own · (iii) 3: *E. coli* ticked

(b)

(i) 10 × 40 = 400.

(ii) Methylene blue.

(iii) Nucleus: controls the cell (holds the DNA); or cell membrane: controls what enters and leaves; or cytoplasm: where most reactions happen.

(iv) Electron microscope.

×400

10 marks · (i) 3: 1 for 10 × 40, 2 for 400 · (ii) 2: methylene blue · (iii) 3: 1 for the structure, 2 for its function · (iv) 2: electron microscope