

UNIVERSITY OF LONDON
GENERAL CERTIFICATE OF EDUCATION
EXAMINATION

SUMMER 1968

Ordinary Level

BIOLOGY

Three hours

Answer SIX questions.

Give labelled diagrams where these will make the answers clearer. Credit will be given for good English and orderly presentation; candidates who neglect these essentials will be penalized.

1. Briefly outline the steps by which nitrogen in the form of nitrates in the soil is incorporated into plant protein. Describe fully how such protein may be converted into the tissues of mammals.
2. In what ways does sexual reproduction in a flowering plant, such as a buttercup, (a) differ from and (b) resemble that in a mammal?
3. Explain concisely how the shape and posture of the mammalian body is maintained. Describe briefly how shape is maintained in (a) an annual herb and (b) a tree.
4. Outline the processes by which carbon dioxide formed as a result of respiration is removed from (a) the tissues of a mammal and (b) a leaf. Describe a simple experiment to demonstrate that carbon dioxide is given off from a plant.
5. Draw diagrams to illustrate the vegetative structure of *Spirogyra* and a named mould. Explain how they differ in their nutrition and their habitat.

6. What is a reflex action? Outline the processes involved in a knee-jerk reflex. Make a large, fully labelled diagram to show the structure of the spinal cord of a mammal as seen in transverse section showing the origin of a pair of spinal nerves.
7. Describe how *Amoeba*, a tapeworm and a *named* flowering plant are each (a) dispersed and (b) survive adverse conditions.
8. Using, as examples, organisms studied personally in a *named* habitat, show how animals and plants depend upon each other.
9. Explain what a biologist means by (a) egestion, (b) larva, (c) host, (d) secretion and (e) accommodation. Illustrate your answer with appropriate examples.
10. Distinguish between (a) tendon and ligament, (b) fruit and seed, (c) enzyme and hormone, (d) food vacuole and contractile vacuole, (e) artery and vein.