O 62—II

OXFORD LOCAL EXAMINATIONS

General Certificate of Education

Summer Examination, 1964

Ordinary Level

BIOLOGY, PAPER II

Friday, 3 July. Time allowed: 1¾ hours

Write the number of the paper, **O 62/II,** *on the left at the head of each sheet of your answers in the space provided.*

Answer any **four** *questions.*

Illustrate your answers by diagrams wherever these are helpful in making your meaning clear.

1. What is a leaf? Draw a diagram to show the structure of a single cell from the mesophyll of a green foliage leaf and briefly comment on the functions of the various parts of this cell. How do the functions of a seed leaf (cotyledon) and a scale leaf of a bud differ from those of a green foliage leaf?

2. Explain, with the help of diagrams, how the following results are achieved.

(*a*) A man is watching a dog running away. He sees the dog clearly all the time.

(*b*) A ball suddenly comes towards a boy and he blinks his eyes.

(*c*) A man staggers as a boat in which he is sailing suddenly lurches then he regains his balance.

3. What is meant by the terms *gamete* and *zygote*? Explain how these are formed in *Spirogyra* and *Hydra*. State what subsequently happens to the zygotes.

4. Distinguish between a vertebra, a vertebrate and an invertebrate, naming two examples of each. With the aid of drawings describe the structure of a named vertebra and briefly relate its structure to its several functions.

5. Give a large labelled diagram of the end portion of a root so as to show the positions of the following:

(*a*) root cap;

(*b*) root hairs;

(*c*) region sensitive to gravity;

(*d*) region of maximum elongation;

(*e*) region where geotropic curvature takes place.

Describe experiments, using a klinostat as a control, to show that a root responds to the stimulus of gravity.

6. What is the origin of soil? Briefly indicate the chief respects in which one soil may differ from another. Describe as fully as you can the importance of bacteria in soil.

7. Either, (*a*) Describe the habits and life-history of **three** aquatic organisms and point out how each one is adapted to its mode of life. [Do **not** choose *Spirogyra, Amoeba, Hydra* or the frog.]

Or, (*b*) Name **three** flowering plants commonly found as garden weeds. Describe the ways in which each is adapted for spreading and survival.

Or, (*c*) Describe where and how you collected any named insect (not the honey-bee or the cabbage white butterfly). Describe its life-history and habits and say what steps you took to observe these either in the laboratory or in its natural habitat.

Or, (*d*) What do you understand by the term *habitat*? Name **three** well-defined habitats pointing out the main features of each. Choose **one** of these and explain how **two** named organisms are adapted to live there. [Do **not** choose *Spirogyra, Amoeba, Hydra* or the frog.]