

Write your Examination Number here

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AN ROINN OIDEACHAIS
LEAVING CERTIFICATE EXAMINATION, 1972
BIOLOGY—ORDINARY LEVEL
FRIDAY, 16th JUNE—AFTERNOON, 2 to 4.30

Answer six questions from Part I and four questions from Part II.
You should not spend more than 40 minutes on Part I, leaving about 100 minutes for Part II.

PART I (120 marks)

Answer any six of the questions (1-7). Each question carries 20 marks.

Write your answers in the spaces provided below.

Keep your answers short.

Write your examination number at top.

Be sure to return the examination paper: enclose it in the answer-book you use for answering Part II.

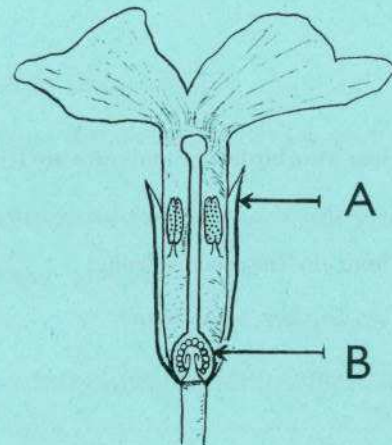
1. Answer five of the following items.

- (a) What is the name given to the transfer of pollen from the anther to the stigma?
- (b) Name the type of tissue that covers the exposed surfaces of the body.
- (c) What structure is used by *Paramecium* to get rid of excess water?
- (d) What do cells obtain from the conversion of ATP to ADP?
- (e) What stimulus is responsible for geotropism in plants?
- (f) What is necessary for germination in addition to heat and moisture?
- (g) Name the structure through which food materials are exchanged between the mother and the embryo in mammals.

2. Name the structures

A.....

B.....



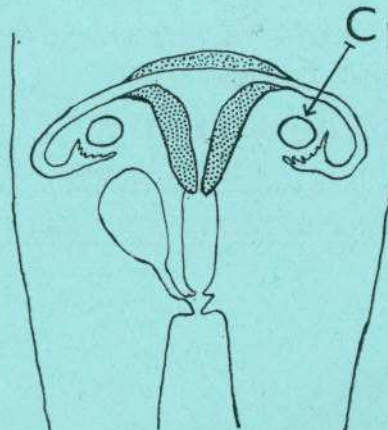
Vertical section through flower

Name the structure C

.....

Mark X on the uterus.

Mark Y on the region where fertilization normally takes place.



Female reproductive organs (human)

3. What is a parasite?

.....
.....

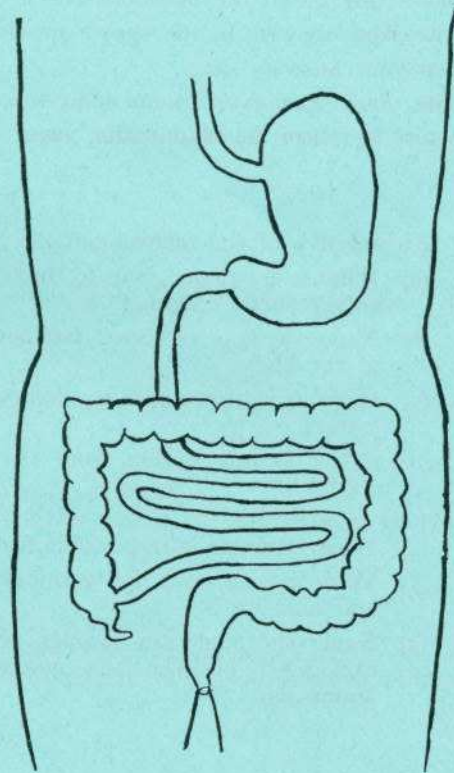
What type of organism causes potato blight?.....

What weather conditions favour the spread of this parasite?
.....
.....

4. Insert the letters X, Y, Z in the diagram to show the position of the duodenum (X), the rectum (Y) and the pancreas (Z).

Draw in a line on the diagram to show the position of the diaphragm.

Name a part of the digestive system that is acidic.
.....



5. Name two birds that migrate to Ireland in the summer.

.....

Where do they come from?

Why do they come here?

.....
.....

Name two birds that migrate to Ireland in the winter.

.....

Where do they come from?

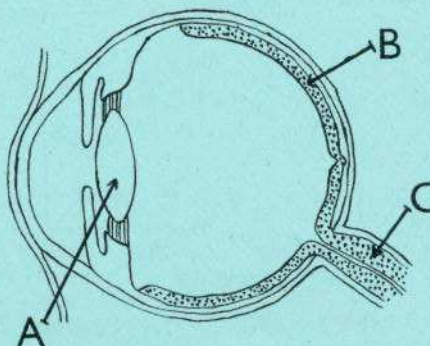
Why do they come here?

.....
.....

6. The diagram shows a section through the eye.

Name the structures

- A.....
- B.....
- C.....



Mark with an X the structure that controls the amount of light entering the eye.

What vitamin aids night vision?

.....

7. A pure breeding black bull was crossed with a pure breeding red cow. The cross is shown diagrammatically below.

Parents	BB	×	bb
	Black dominant		Red recessive

Show the gamete type produced by each parent:

What is the phenotype (i.e. black or red) of the F₁ generation?

What is the genotype of the F₁ generation?

If an F₁ bull were crossed with an F₁ cow what phenotypes would result and in what ratio?

.....

PART II (280 marks)

Write your answers to this part in your answer-book.

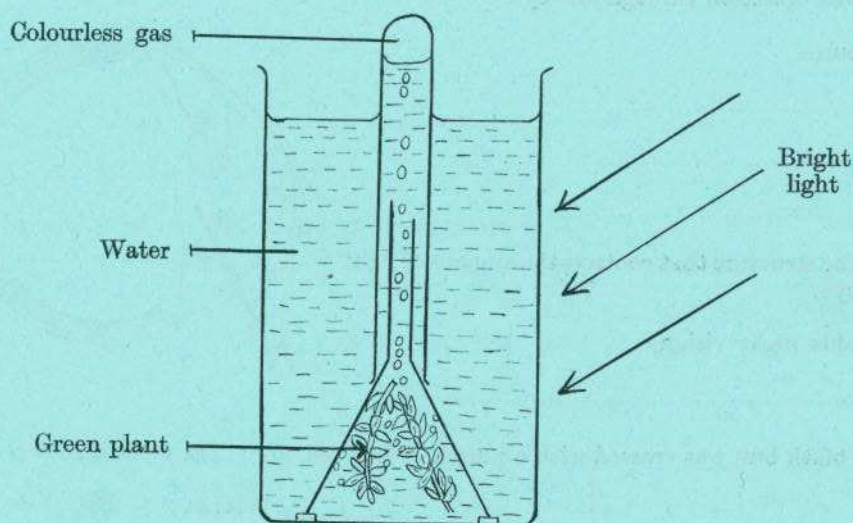
Answer any **four** questions. Each question carries 70 marks.

When you have finished be sure to enclose the whole examination paper in your answer-book.

8. Draw a labelled diagram to show the general structure of the plant cell **or** the animal cell.
State the functions of two of the cell structures which you show.
Mitosis and meiosis are the two processes by which cells divide. What is the function of each process?
(A detailed description of these processes is not required.)
9. (a) List the characteristics of living things. Describe briefly the characteristic features by which plants and animals are distinguished from each other.
(b) Explain alternation of generations by reference to the life cycle of the moss,
or explain metamorphosis by reference to a named insect.
10. Give a short description of the composition of blood.
Blood has both a protective and a nutritive function. How does it carry out each of these functions?
Give two other major functions of blood.
Why is blood considered to be a tissue?
11. Name two tissues in the flowering plant that are concerned with support. How are the cells of one of these tissues adapted for this function?
Give a brief account, with illustrations, of the process of secondary thickening in a dicotyledonous stem.
12. Why should your diet contain each of the following: fats, carbohydrates, proteins?
One of the functions of enzymes is to assist in the breakdown of food in the digestive tract. Suggest why this breakdown is necessary.
Describe an experiment you could carry out to demonstrate the action of an enzyme.

PART II CONTINUED OVER →

13. What is photosynthesis? Briefly outline its importance to living organisms.



The diagram shows the apparatus used in an experiment on photosynthesis using an aquatic plant. What hypothesis is being tested in this experiment? What control would you use in the experiment? What test would you carry out on the gas collected in the test tube to test your hypothesis? Suggest a reason why the gas in the test tube is probably a mixture of gases.

14. (a) Explain the terms (i) fossil (ii) evolution.
 (b) Give Darwin's theory and outline the evidence on which he based his theory, or describe briefly, with the aid of examples, the evidence that fossils provide to suggest that evolution has occurred.
15. What is meant by an ecosystem?
 What do (i) plants (ii) animals compete for in an ecosystem?
 Describe one example of competition in the ecosystem you have studied.
 Describe how (i) a named plant, (ii) a named animal, is adapted to survive the winter.