



EXAMINATIONS COUNCIL OF ZAMBIA
JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) 2017
Integrated Science 502/2
Paper 2

(INTERNAL CANDIDATES)

Time: 2 hours

Marks: 60

An extra 10 minutes will be given to you so that you complete your particulars on the Answer Booklet before you start writing.

Instructions to Candidates

- 1 Pull out the Answer Booklet from the middle of the question paper.**
- 2 Write your name, examination number and school / centre name on the Answer Booklet.**
- 3 Write your answers in the spaces provided in the Answer Booklet.**
- 4 Answer all the questions.**

Information to Candidates

Cell phones are not allowed in the examination room.

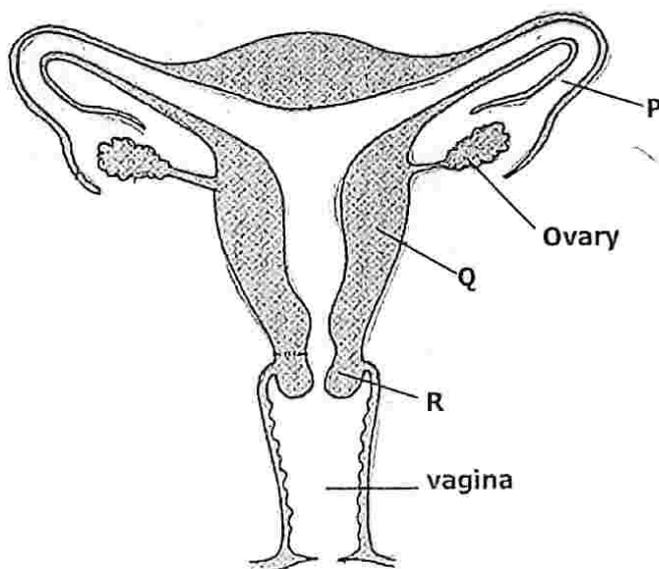
Calculators are not allowed in the examination room.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.



1 THE HUMAN BODY

The diagram below shows parts of a female reproductive organ.

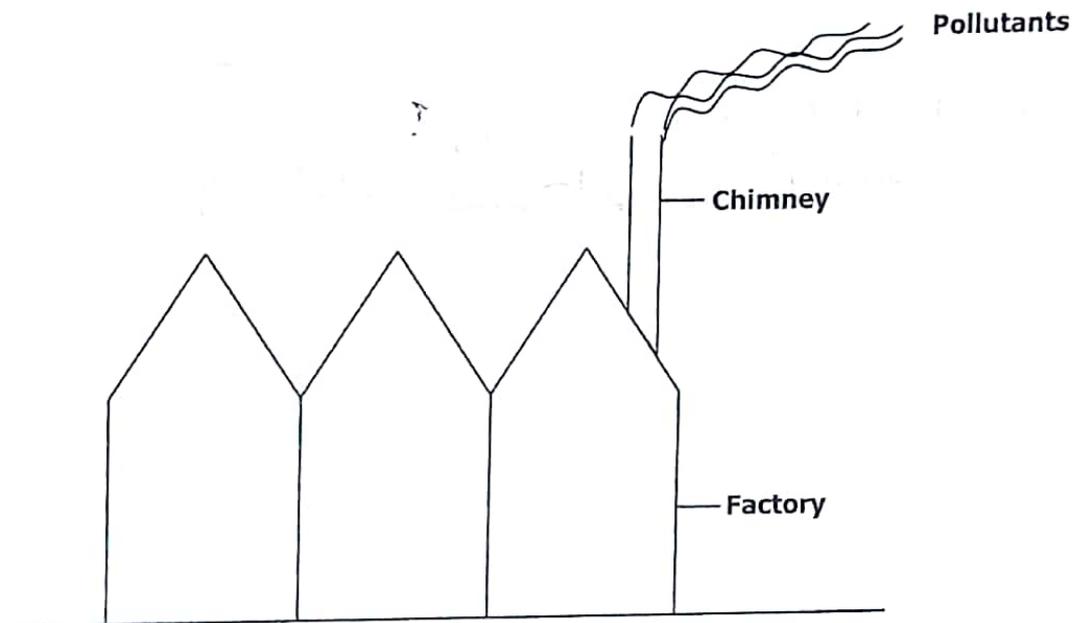


- (a) Name the parts labelled **P**, **Q** and **R**. [3]
- (b) In which labelled part does fertilisation take place? [1]
- (c) State **one** function of the part labelled **R**. [1]
- (d) State **one** importance of observing personal hygiene of the reproductive organs. [1]

Total = 6 marks

2 THE ENVIRONMENT

The diagram below shows a factory producing pollutants into the atmosphere.

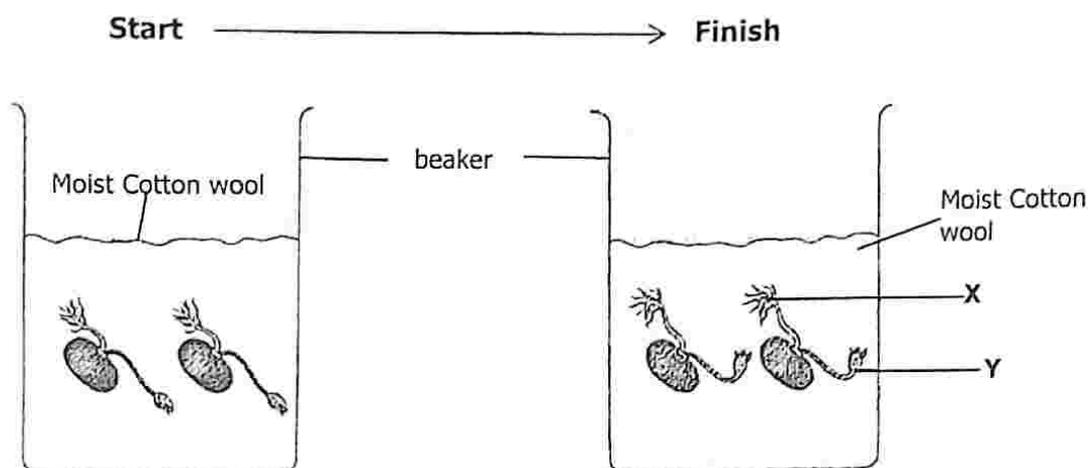


- (a) Suggest **one** pollutant produced by the factory. [1]
- (b) Apart from factories, name **one** other source of air pollution. [1]
- (c) Describe **two** effects of atmospheric pollution. [2]
- (d) Suggest **two** ways of preventing pollution. [2]

Total = 6 marks

3 PLANTS AND ANIMALS

The diagrams below show an experiment on tropisms.

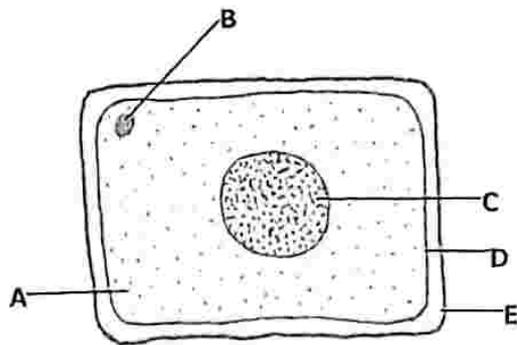


- (a) Which labelled part has demonstrated positive;
- (i) phototropism?
 - (ii) geotropism? [2]
- (b) Explain why these responses are important to the seedlings. [2]
- (c) Suggest one reason why the cotton wool must be kept moist all the time. [1]
- (d) Apart from the nutrient in the moist cotton wool, what other nutrient is needed by the growing seedlings? [1]

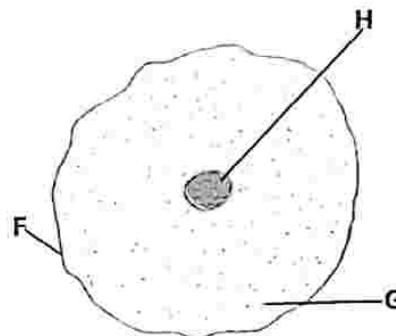
Total = 6 marks

4 PLANTS AND ANIMALS

The diagrams below show plant and animal cells of living organisms.



Plant Cell



Animal Cell

- (a) Which labelled part is selectively permeable on the
- (i) plant cell?
- (ii) animal cell? [2]
- (b) Identify the structure **F** and explain its function. [2]
- (c) From the diagram, state **one** difference between a plant cell and an animal cell. [1]
- (d) State **one** other difference between the plant cell and animal cell not in the diagram. [1]

Total = 6 marks

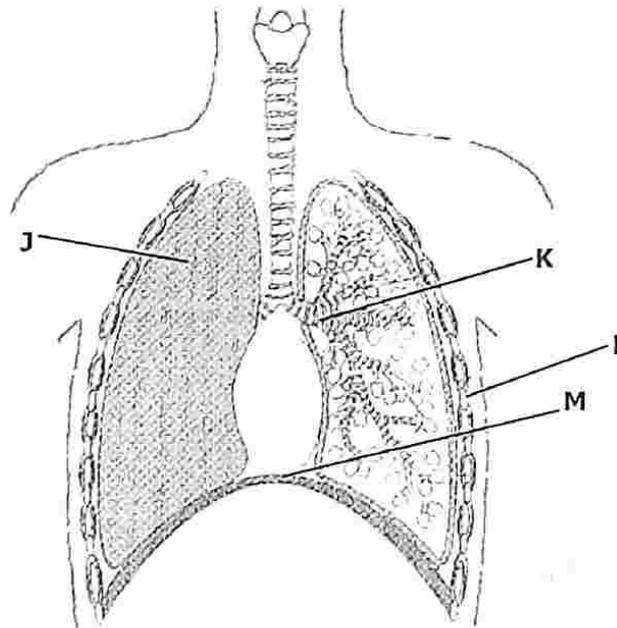
5 MATERIALS AND ENERGY

- (a) Define the following terms.
- (i) Atom
- (ii) Element [2]
- (b) Describe the basic structure of an atom. [2]
- (c) How many atoms are in the following molecules?
- (i) CO_2
- (ii) H_2 [2]

Total = 6 marks

6 THE HUMAN BODY

The diagram below shows the human respiratory system.



- (a) Name the parts labelled **J** and **K**. [2]
- (b) Explain how the structure labelled **M** causes inhalation of air. [2]
- (c) Identify one labelled structure which is affected by cigarette smoking. [1]
- (d) Explain what is meant by tissue respiration. [1]

Total = 6 marks

7 HEALTH

- (a) Explain **two** ways in which one can get infected with HIV and AIDS. [2]
- (b) Apart from HIV and AIDS, state **two** other sexually transmitted diseases. [2]
- (c) Describe **two** impacts of HIV and AIDS on the Zambian population. [2]

Total = 6 marks

8 **PLANTS AND ANIMALS**

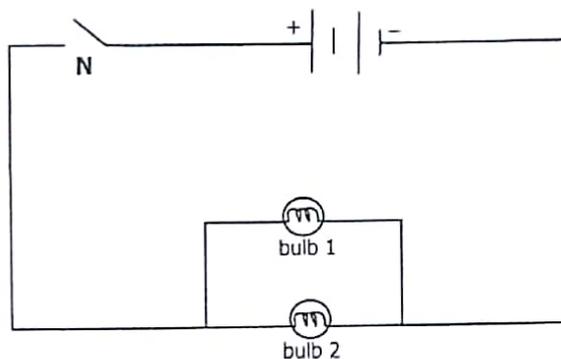
In the recent past, human activities have increased the rate of extinction of species of organisms.

- (a) State **two** kinds of human activities which can lead to extinction of species. [2]
- (b) Give reasons why the species listed below are facing extinction.
- (i) Elephants
- (ii) Mukwa [2]
- (c) Explain how loss of species affects the agriculture sector. [1]
- (d) Give **one** benefit of protecting endangered species. [1]

Total = 6 marks

9 ELECTRICITY

The diagram below shows an electric circuit.



(a) On the circuit diagram in the answer booklet, place the correct position for the;

(i) ammeter ———— (A) ————

(ii) voltmeter ———— (V) ———— [2]

(b) Identify the part labelled N. [1]

(c) State the type of connection of bulbs 1 and 2 in the circuit. [1]

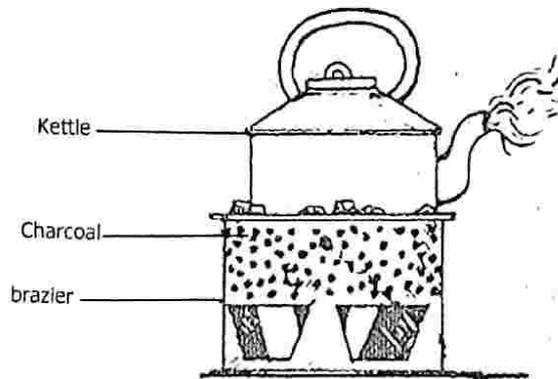
(d) Why is it best to connect bulbs in the type of arrangement you stated in (c) above? [1]

(e) Give **one** example of the use of electric current in our homes. [1]

Total = 6 marks

10 MATERIALS AND ENERGY

The diagram shows charcoal burning on the brazier and used to heat water in a kettle.



- (a) (i) Define energy.
- (ii) What form of energy is possessed by charcoal before it is burnt? [2]
- (b) Describe the energy change which takes place as the charcoal burns. [1]
- (c) Explain how the environment is affected when energy is produced using;
- (i) hydroelectric power station;
- (ii) fossil fuel. [2]
- (d) Suggest **one** way in which energy can be conserved. [1]

Total = 6 marks