ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

COMBINED SCIENCE 4003/1

PAPER 1 Multiple Choice

NOVEMBER 2018 SESSION 1 hour

Additional materials:
Multiple Choice answer sheet
Soft clean eraser
Soft pencil (type B or HB is recommended.)
Calculator (Optional)

INSTRUCTIONS TO CANDIDATES

Do **not** open this booklet until you are told to do so.
Write your name, centre number and candidate number on the answer sheet in the spaces provided unless this has already been done for you.
Read very carefully the instructions on the answer sheet.

INFORMATION FOR CANDIDATES

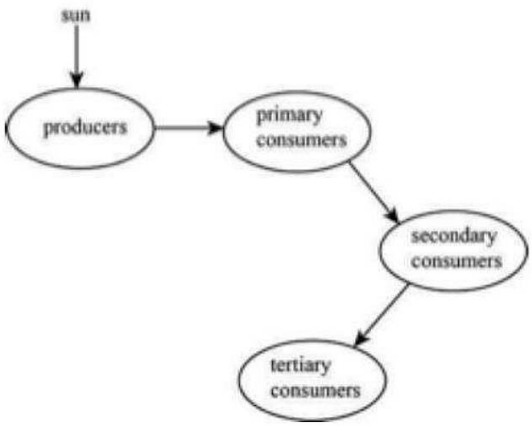
Each correct answer will score **one** mark. A mark will **not** be deducted for a wrong answer.
Any rough working should be done in this booklet.

There are **forty** questions in this paper. Answer **all** questions. For each question, there are four possible answers, **A**, **B**, **C** and **D**. Choose the one you consider correct and record your choice in soft pencil on the separate answer sheet provided.

Copyright: Zimbabwe School Examinations Council, N2018.

© ZIMSEC N2018

1. The diagram shows the flow of energy through an ecosystem.



Which level has the highest amount of energy?

A producers
B primary consumers
C secondary consumers
D tertiary consumers

2. What makes proteins an essential component of the human diet?

A They are needed for cell growth.
B They are the main source of energy.
C They can be stored as a food reserve.
D They are needed to prevent anaemia.

3. A child is showing stunted physical and mental growth.

Which mineral element is lacking in the child's diet?

A iron
B iodine
C calcium
D phosphorus

4. A person with poor night vision lacks

A vitamin A.
B vitamin C.
C vitamin D.
D vitamin K.

5. How is an alveolus adapted for gaseous exchange?

A It has a dry surface.
B It has a thick alveolus wall.
C It has a large surface area.
D It has few blood capillaries.

6. Which adaptation of a plant reduces transpiration?

A large surface area of a leaf
B small surface area of a leaf
C thin layer of cuticle on a leaf
D large number of stomata on a leaf

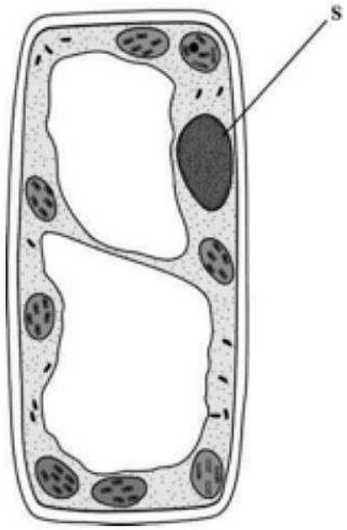
7. Which method of propagation is used to grow Irish potatoes?

A cuttings
B rhizomes
C seeds
D tubers

8. One method that may lead to the spread of HIV/AIDS is

A faithfulness to one uninfected partner.
B abstinence from sexual activity.
C sharing contaminated needles.
D proper use of condoms.

9. The diagram shows a palisade cell.



What is the function of **S**?

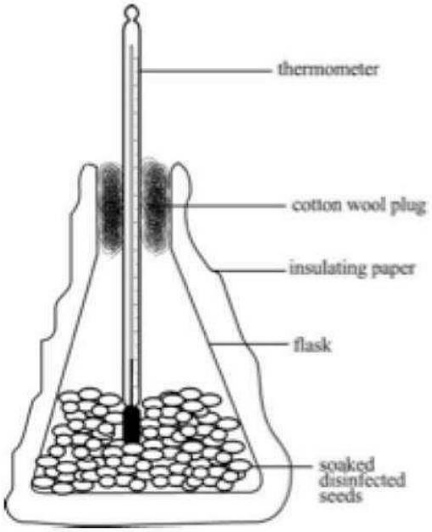
A stores salts and sugars
B controls the cell's activities
C carries out photosynthesis
D controls what gets in and out of the cells

10. A toddler is suffering from a deficiency disease which causes bones to remain soft and become deformed.

The disease is caused by lack of

A carbohydrates.
B vitamin D.
C proteins.
D iodine.

11. The diagram shows apparatus to investigate a biological process.

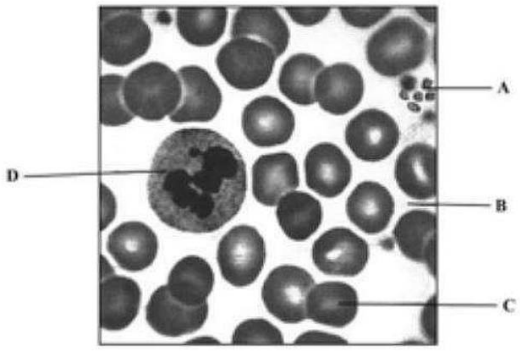


Which process causes the temperature in the flask to increase?

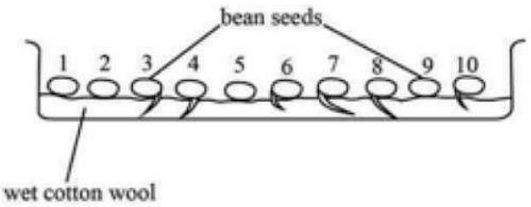
A decay
B respiration
C germination
D gaseous exchange

12. The diagram shows some components of human blood.

Which component of blood transports oxygen to the body cells?



13. The diagram shows a container with germinating bean seed.



What is the percentage germination?

A 4%
B 6%
C 40%
D 60%

14. Which method of contraception is also effective in the prevention of sexually transmitted infections?

A condom
B spermicide
C rhythm method
D the contraceptive pill

15. Which statement is true about metals?

A They are alloys.
B They are brittle.
C They are ductile.
D They are good insulators.

16. Which method is used to separate a mixture of dyes?

A decanting
B crystallisation
C chromatography
D fractional distillation

17. Which pH range would turn the universal indicator to blue?

A 0 to 2
B 4 to 6
C 7 to 8
D 10 to 12

18. The reaction between ammonia and nitric acid produces

A a refrigerant.
B a detergent.
C a fertiliser.
D paint.

19. An element **Y** has the electronic configuration of 2, 8, 6.

Which statement is true about **Y**?

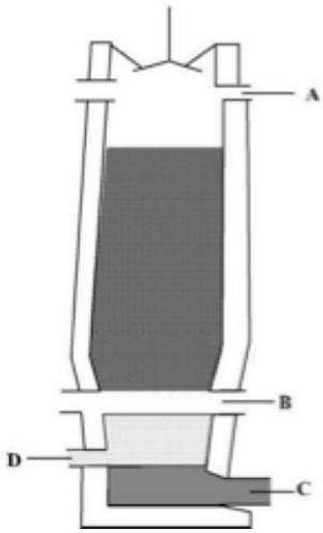
A It has six protons.
B It forms an ion of charge +2.
C It forms an ionic compound with sodium.
D It forms a covalent compound with magnesium.

20. Which gas is obtained from the fractional distillation of liquid air?

A nitrogen
B hydrogen
C sulphur dioxide
D carbon monoxide

21. The diagram shows the blast furnace.

Which outlet is used to remove iron from the furnace?



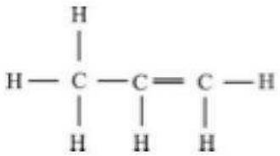
22. Which statement about ethane is true?

A It is a fuel.
B It is an alcohol.
C It forms polythene.
D It has a double bond.

23. Oxidation is the

A gain of hydrogen by a compound.
B gain of electrons by a compound.
C removal of oxygen from a compound.
D removal of hydrogen from a compound.

24. The diagram shows an organic compound.



The organic compound is

A an alcohol.
B an alkane.
C an alkene.
D saturated.

25. Why is vanadium (V) oxide used in the conversion of sulphur dioxide to sulphur trioxide?

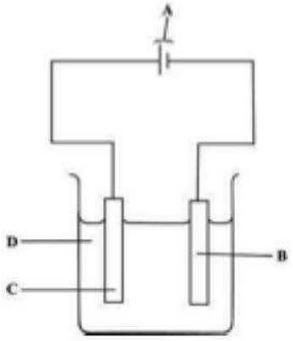
A It reacts with sulphur dioxide.
B It increases the rate of the reaction.
C It increases the temperature of the reaction.
D It recycles the unreacted reactants during the reaction.

26. What do the fuels methane, charcoal and petrol have in common?

A they are all gases
B they all contain oxygen
C they all contain carbon
D they are all hydrocarbons

27. The diagram shows an electrolytic cell.

Which part, **A**, **B**, **C** or **D**, is the anode?



28. Which surface is the worst emmitter of heat energy?

A dull black
B dull white
C shiny black
D shiny white

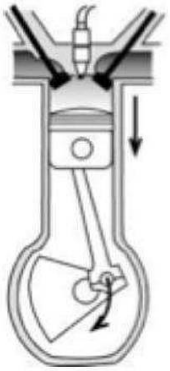
29. Which one is a way of reducing friction?

A adding mass
B reducing mass
C using rough surfaces
D increasing contact area of moving parts

30. Which instrument is used to measure the diameter of a thin wire accurately?

A metre rule
B tape measure
C vernier callipers
D micrometer screw gauge

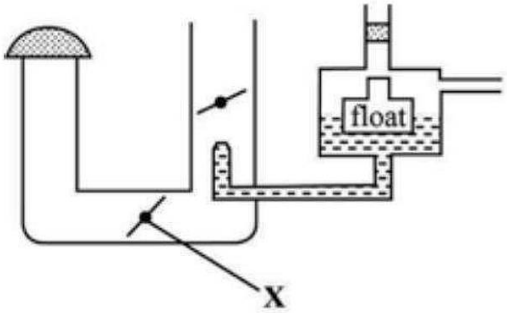
31. The diagram shows a cylinder in a petrol engine.



Which stroke is shown in the diagram?

A compression
B intake
C power
D exhaust

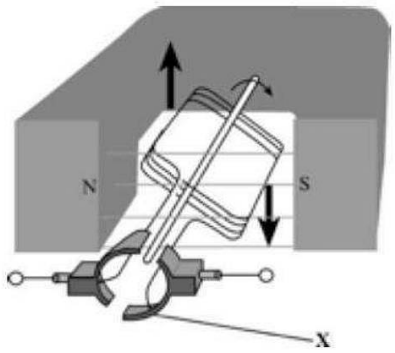
32. The diagram shows a carburetor.



What is **X**?

A choke
B throttle
C air filter
D petrol filter

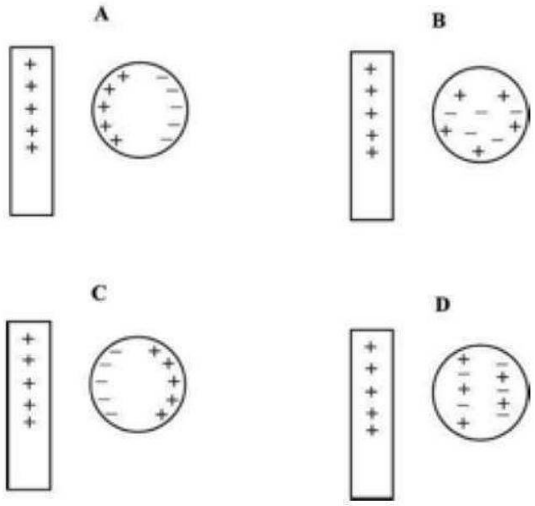
33. The diagram shows a simple direct current (d.c) motor.



What is the part labelled **X**?

A brush
B slip ring
C magnet
D commutator

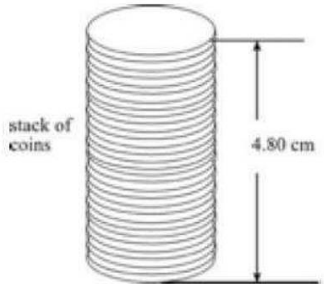
34. Which diagram shows the correct distribution of charges between an uncharged sphere and a positively charged rod?



35. Which one is a unit of potential difference?

A Ohm
B volt
C watt
D ampere

36. The diagram shows the height of a stack of 30 identical coins.



What is the thickness of one coin?

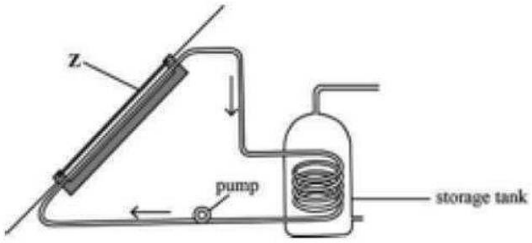
A 0.16 cm
B 6.25 cm
C 25.20 cm
D 144.00 cm

37. A rock has a weight of 6.7 N. The gravitational acceleration, g, is 10 N/kg.

What is the mass of the rock?

A 0.67 kg
B 6.7 kg
C 67 kg
D 670 kg

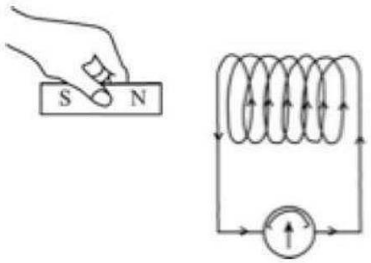
38. The diagram shows parts of a solar water heater.



What is the function of **Z**?

A It allows heat to reach the tubing.
B It is used to store heat energy.
C It is used to insulate the tubing.
D It is a good conductor of heat.

39. A magnet is placed near a solenoid connected to a galvanometer, as shown by the diagram.



When is the reading in the galvanometer zero?

A when the magnet is moving fast into the solenoid
B when the magnet is stationary inside the solenoid
C when the magnet is moving slowly into the solenoid
D when the solenoid is moving slowly towards the magnet

40. The diagrams show four wires of different sizes but made up of the same material.

Which wire has the greatest electrical resistance?

