



EXAMINATIONS COUNCIL OF ZAMBIA

JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) – 2019

Integrated Science 502/1

Paper 1

(INTERNAL CANDIDATES)

Time: 1 hour

Marks: 40

Instructions to candidates

1. Separate the **Answer Sheet** from the question paper.
2. Write your name, examination number and school/centre name on the Answer Sheet.
3. Answer **all** questions in this paper.
4. For each question, four suggested answers are given **A, B, C** and **D**. Choose the best one and show it on the **Answer Sheet** by marking it with a cross (X).

Example

A	B	C	D
----------	----------	----------	----------

5. Hand in the **Answer Sheet** and the rest of the question paper separately.

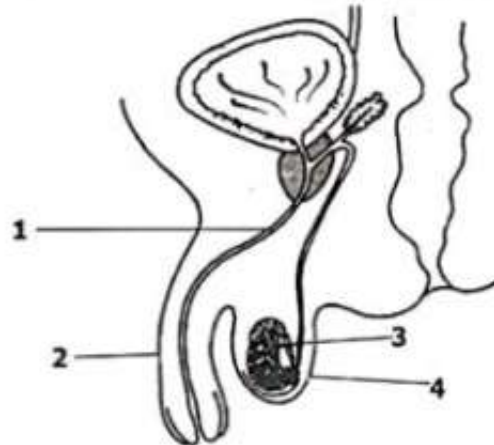
Information for candidates

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 Study the diagram below on the male reproductive system in human beings.



Which numbered organ is responsible for keeping the temperature conducive for sperm production?

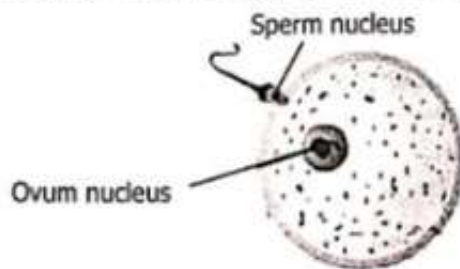
- A 1
- B 2
- C 3
- D 4

- 2 Which of the following is **not** a good health habit?

- A Washing the reproductive organs regularly with soap and clean water.
- B Changing sanitary towels regularly during menstruation.
- C Keeping the reproductive organs damp or wet.
- D Changing underwear regularly and ironing them before wearing.

www.eczpastpapers.com

- 3 The following diagram shows a process that occurs during human reproduction.

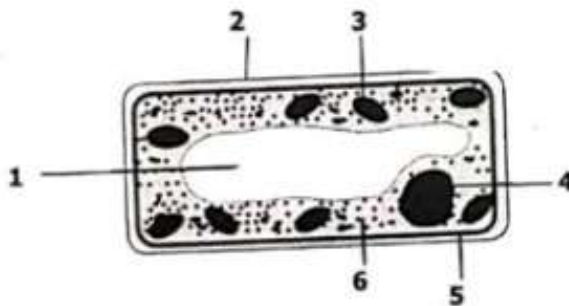


The process shown in the diagram illustrates ...

- A fertilisation.
- B gestation.
- C implantation.
- D ovulation.

- 4 Which of the following best describes the function of the placenta?
- A Transports food nutrients and oxygen to the embryo.
 - B Protects the embryo against external shocks.
 - C Allows implantation of zygote and embryo development.
 - D Allows exchange of food nutrients and oxygen between the mother and the embryo.
- 5 The deficiency disease caused by lack of vitamin D in the diet resulting in soft and weak bone development is ...
- A kwashiorkor.
 - B marasmus.
 - C rickets.
 - D scurvy.
- 6 Which of the following does **not** describe the importance of the children's clinic?
- A Immunisation of the child against diseases
 - B Growth monitoring through weighing the child
 - C Monitoring if the child will have learning difficulties as it grows
 - D Provision of nutritional advice when there are signs of malnutrition
- 7 Which of the following is **not** an effect of air pollution? It causes
- A unpleasant smell.
 - B difficulties in breathing.
 - C lung and heart diseases.
 - D death of aquatic animals.

- 8 The diagram below shows the basic structures of a plant cell.

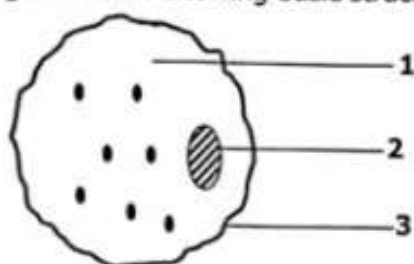


The structures that are NEVER found in the animal cell are ...

- A 1 and 2.
- B 2 and 3.
- C 5 and 6.
- D 1 and 4.

- 9 What is the name of the process in plants that is negatively affected when oxygen is in limited supply?
- A Osmosis
B Respiration
C Transpiration
D Photosynthesis

- 10 Study the diagram below showing basic structures of an animal cell.

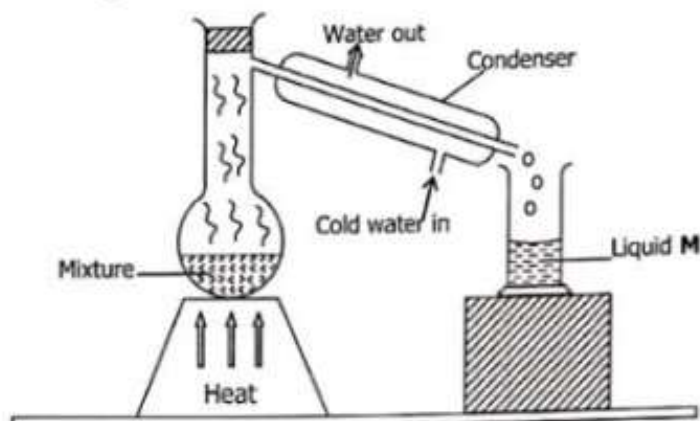


Identify the part(s) of the animal cell showing the site(s) where most chemical processes take place.

- A 1 only
B 2 only
C 1 and 3
D 2 and 3
- 11 Which statement best describes a molecule? A molecule is ...
- A the smallest particle of an element.
B that which occupies space and has weight.
C a small group of atoms of elements joined together.
D a pure substance that cannot be split into simpler substances.
- 12 Pure ice was heated to a temperature of 60°C and then cooled to room temperature. Which row shows the correct state of matter before heating, at 60°C and after cooling?

	Before heating	At 60°C	After Cooling
A	Solid	Vapour	Vapour
B	Liquid	Solid	Liquid
C	Solid	Liquid	Liquid
D	Liquid	Vapour	Liquid

- 13 The diagram below shows an experiment on the separation of a mixture.



What term is used to describe liquid **M**?

- A Distillate
 - B Filtrate
 - C Residue
 - D Solution
- 14 Which of the following are used to measure mass and weight?

	Mass	Weight
A	Beam balance	Spring balance
B	Scale	Beam balance
C	Beam balance	Scale
D	Spring balance	Beam balance

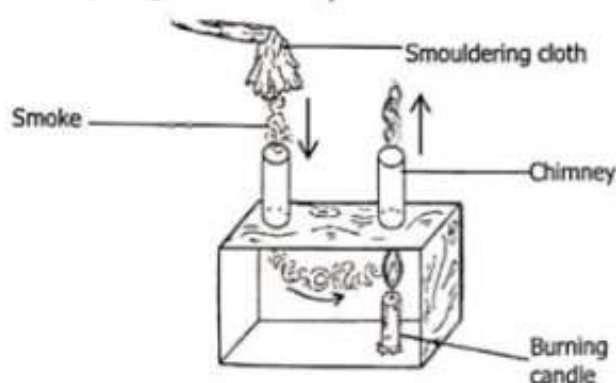
www.eczpastpapers.com

- 15 A learner was asked to determine the density of a stone. She made the following measurements:
- Volume of water in the measuring cylinder before immersing the stone = 30cm^3 .
 - Volume of water in the measuring cylinder after immersing stone = 50cm^3 .
 - Mass of measuring cylinder and 30cm^3 of water = 120g.
 - Mass of measuring cylinder, 30cm^3 of water and the stone = 170g.

Use the information above to determine the density of the stone. The density of the stone is ...

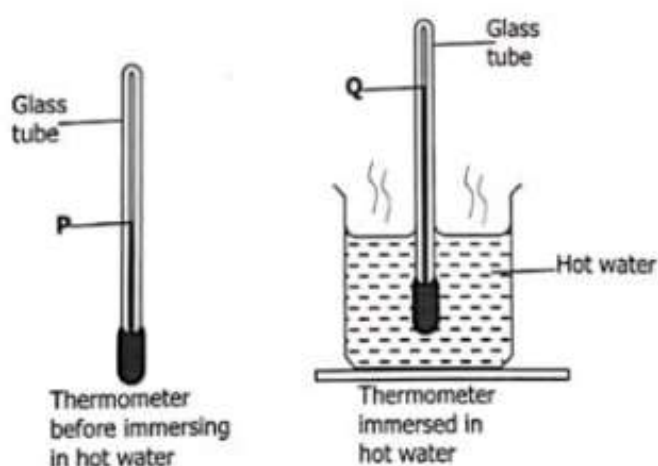
- A 1.6g/cm^3 .
- B 2.5g/cm^3 .
- C 4.0g/cm^3 .
- D 9.0g/cm^3 .

- 16 Study the following diagram on an experiment on heat transfer.



The experiment is demonstrating heat transfer by ...

- A radiation.
 - B convection.
 - C convection and conduction.
 - D radiation and convection.
- 17 The diagrams below show different levels of mercury in a thermometer before and after it was immersed in hot water.

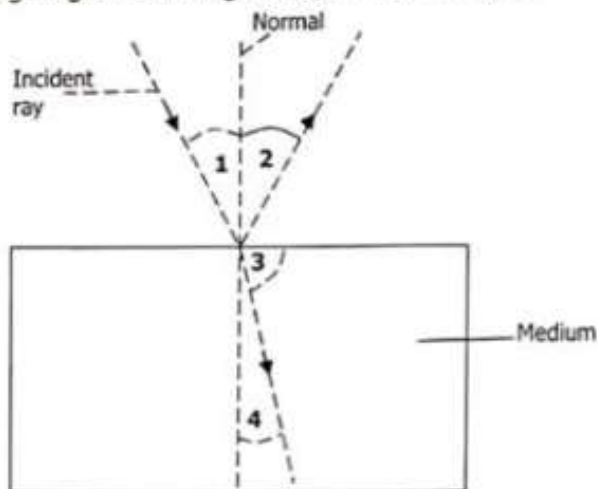


www.eczpastpapers.com

What is the reason for the change in the mercury level from P to Q?
This was because the ...

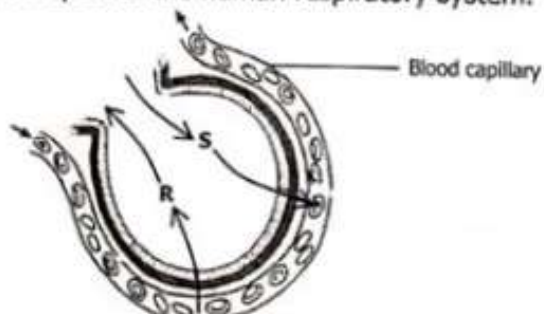
- A mercury expanded.
- B mercury contracted.
- C glass tube expanded.
- D glass tube contracted.

- 18 Study the following diagram showing an experiment on light.



Which numbered angle shows the angle of reflection?

- A 1
 - B 2
 - C 3
 - D 4
- 19 Which of the following is the second most abundant gas in clean air?
- A Carbon dioxide
 - B Nitrogen
 - C Oxygen
 - D Sulphur dioxide
- 20 Which of the following components of blood fights disease?
- A Plasma
 - B Platelets
 - C Red blood cells
 - D White blood cells
- 21 The diagram below shows part of the human respiratory system.

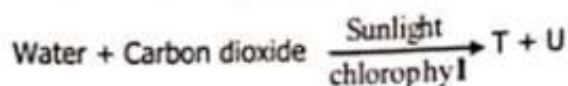


Identify the gases **R** and **S**.

	R	S
A	Carbon dioxide	Nitrogen
B	Oxygen	Carbon dioxide
C	Carbon dioxide	Oxygen
D	Nitrogen	Oxygen

- 22** Which of the following statements is true about gonorrhoea, syphilis and herpes? They all can be ...
- A** transmitted by virus.
 - B** transmitted by bacteria.
 - C** treated using antibiotics.
 - D** prevented by similar methods.
- 23** Which one of the following is **not** a mode of transmission of HIV?
- A** Sharing the same bed with an infected person.
 - B** Infected mother to child at birth and after birth.
 - C** Sharing needles contaminated with fresh blood.
 - D** Having sexual contact with an infected person.
- 24** What changes nitrogen back into gaseous state in the nitrogen cycle?
- A** Denitrifying bacteria.
 - B** Lightning.
 - C** Nitrogen fixing bacteria in the soil.
 - D** Nitrogen fixing bacteria in legumes.
- 25** Chlorine is added to water at a treatment plant in order to ...
- A** filter out small particles.
 - B** sediment big solid particles.
 - C** kill viruses in the water.
 - D** kill bacteria or germs in the water.
- 26** Which of the following trees is in great danger of extinction due to illegal timber exploitation?
- A** Masuku
 - B** Mubanga
 - C** Mukwa
 - D** Mulombe

- 27 Below is an incomplete word equation.



Identify products **T** and **U**.

	T	U
A	Oxygen	Energy
B	Starch	Oxygen
C	Starch	Nitrogen
D	Oxygen	Starch

- 28 What term is used to describe the process by which plants lose water into the atmosphere?

- A** Expiration
- B** Inspiration
- C** Respiration
- D** Transpiration

- 29 Which of the following is an endothermic reaction?

- A** Burning
- B** Electrolysis
- C** Precipitation
- D** Rusting iron

www.eczpastpapers.com

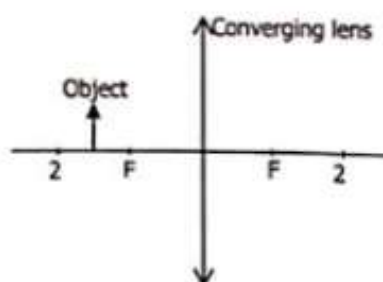
- 30 Study the following equation on a chemical reaction.



This is an example of ...

- A** decomposition.
- B** double replacement.
- C** single replacement.
- D** synthesis.

- 31 The diagram shows an object placed between F and 2F.



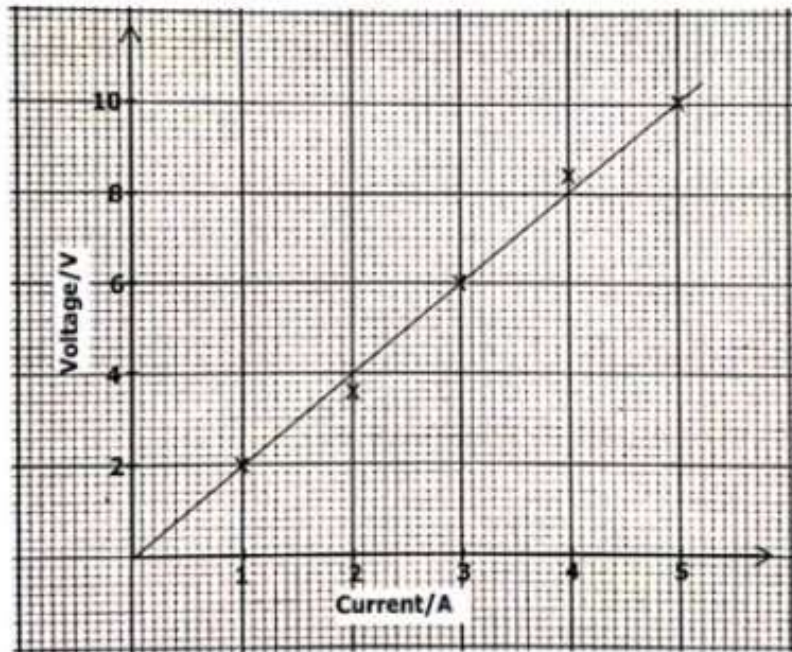
The image of the object shown in the diagram produced by the lens will be ...

- A real and inverted.
- B virtual and inverted.
- C real and erect.
- D virtual and erect.

- 32 A lady wearing a red dress went into a room where there was green light. What colour will her dress appear?

- A Black
- B Green
- C Red
- D White

- 33 The graph below shows results obtained from an experiment to determine the resistance of a wire.



www.eczpastpapers.com

Using the information on the graph, determine the resistance of the wire. The resistance of the wire will be ...

- A 0.5Ω .
- B 1.0Ω .
- C 2.0Ω .
- D 2.5Ω .

34 The following is a list of appliances that use electric current:

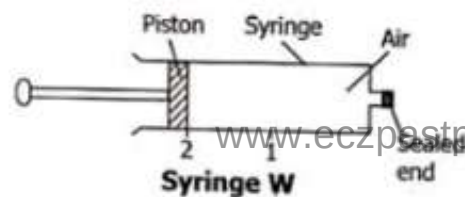
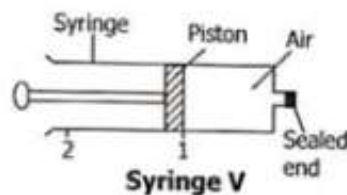
- 1 Electric fan
- 2 Electric cooker
- 3 Electric shaving machine
- 4 Electric kettle
- 5 Electric pressing iron

Which of the following numbers show appliances that mainly use electric current for heating?

- A 1, 3, 4
- B 2, 4, 5
- C 2, 3, 4
- D 1, 2, 5

35 The diagrams below show two sealed syringes of equal volume and containing the same amount of air.

The piston in syringe **V** is pushed to **1** while that in syringe **W** remained at **2**.



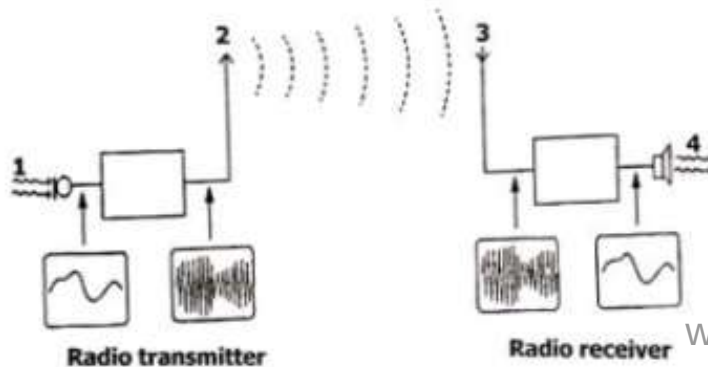
Which of the following is true about the pressure of the air in syringe **V** and **W**?

	Pressure of air in V	Pressure of air in W
A	High	Low
B	High	High
C	Low	High
D	Low	Low

36 Which of the following is **not** a way of conserving energy?

- A Using energy saver bulbs for lighting
- B Planting trees around the house
- C Reducing the amount of waste we produce
- D Using mostly charcoal and wood for cooking

- 37 What is the disadvantage of using television as a means of communication?
- A Television combines sound and pictures.
 - B It has a negative effect on eyesight.
 - C It provides a different form of entertainment.
 - D Television has a limited coverage and less audience.
- 38 Analogue signal is best defined as a signal that ...
- A is obtained from sounds.
 - B is obtained from pictures.
 - C changes in light levels and voltage pulses.
 - D continuously changes in both frequency and amplitude.
- 39 Study the diagram below illustrating radio transmission.



www.eczpastpapers.com

The numbered parts are ...

	1	2	3	4
A	Microphone	Transmission antenna	Reception antenna	Loudspeaker
B	Loudspeaker	Reception antenna	Transmission antenna	Microphone
C	Reception antenna	Loudspeaker	Microphone	Transmission antenna
D	Transmission antenna	Microphone	Loudspeaker	Reception antenna

- 40 Which one of the following is **not** an advantage of satellite communication?
- A The systems of communication can easily be deployed.
 - B It is flexible as it can provide a variety of communication.
 - C Mobility is easy as communications are able to reach out globally.
 - D Operational costs and installation of satellite systems are affordable.