



**SUREKEY EXAMINATIONS BOARD**

**PRE-PLE TARGET SERIES**

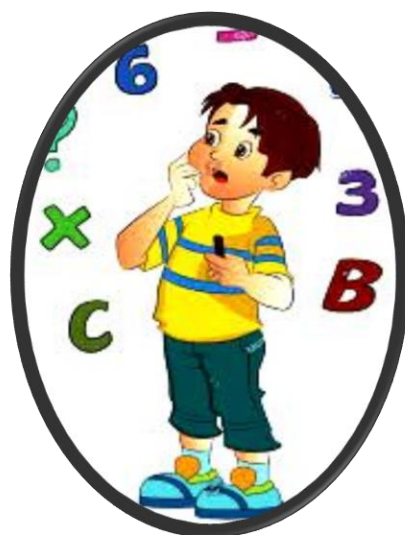
**2022**

**INTEGRATED SCIENCE MARKING GUIDE**

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**“Don’t speak for Quality, Let the Quality Speak for itself”**

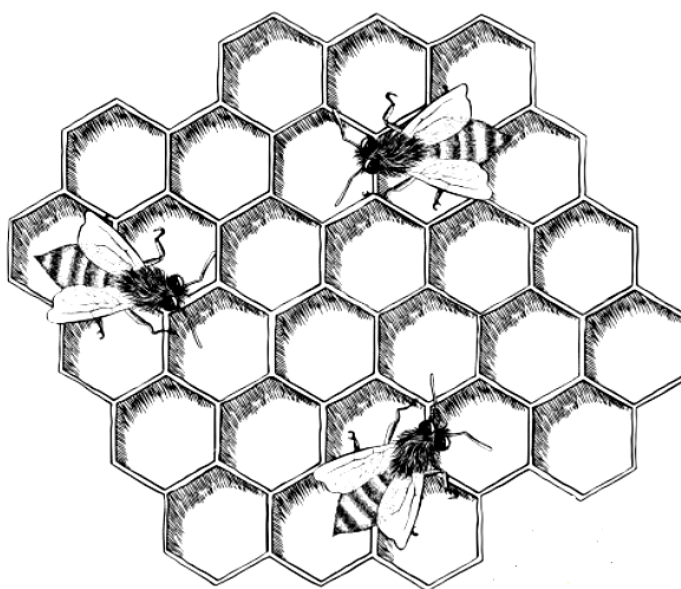
## SECTION A: 40 MARKS

1. Name the body organ used for reasoning.
  - **The brain/ brain (Reject: mouth)**
2. Which disease vector spreads dengue fever to people?
  - **Tiger mosquito/ aedes mosquito (Reject: tiger alone)**
3. State any **one** use of PIASCY messages in preventing venereal diseases to school children.
  - **They help school children to abstain from sex**
  - **They help school children to have self awareness about the spread of venereal diseases**
  - **The help school girls to overcome defilement by men**
  - **They help school children to avoid early marriages**

**Advice:**

  - Revise the concept of PIASCY with children i.e.
    - ✓ Meaning
    - ✓ PIACSY massages
    - ✓ Importance of PIASCY
    - ✓ Roles of school children in promoting PIASCY
4. Give any **one** exotic breed of chicken kept for egg production.
  - **White leghorn**
  - **Brown egger**
  - **Ancona**
  - **Minorca**

The diagram below shows structures built by worker bees in the hive. Use it to answer questions **5** and **6**.

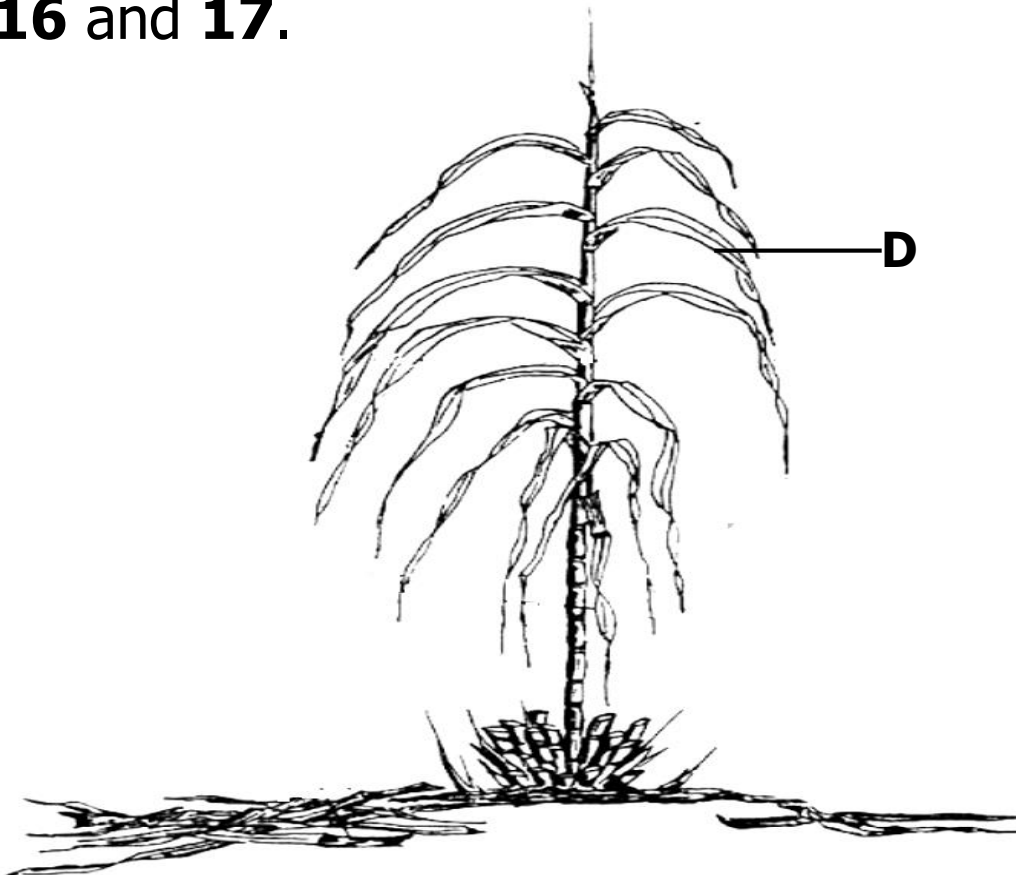


5. Name the structures shown in the diagram above.
  - **Honey combs(reject bee combs)**
6. State the importance of the above structures to the worker bees in the hive.
  - **Worker bees use the above structure to keep honey**
  - **They are used to keep honey/for storing honey.**



15. How is the cochlea important in the process of hearing?
- **The cochlea converts sound vibrations into nerve impulses/nerve signals/ electrical signals**
- Note:** The cochlea is the center of hearing in the ear

The diagram below shows a sugarcane plant. Study it and answer questions **16** and **17**.



16. What type of leaf venation does part marked **D** have?
- **Parallel leaf venation**
17. How is propagation of the above plant different from that of a millet plant?
- **The above plant is propagated by planting stem cuttings while a millet plant is propagated by planting seeds**
- Reject: A sugar cane plant is propagated by planting stem cuttings while a millet plant is propagated by planting seeds
18. State any **one** factor that leads to weathering of rocks.
- |                                |                                |
|--------------------------------|--------------------------------|
| • <b>Change in temperature</b> | • <b>Quarrying</b>             |
| • <b>Movement of ice</b>       | • <b>Earthquakes</b>           |
| • <b>Action of air</b>         | • <b>Action of plant roots</b> |
| • <b>Action of water</b>       | • <b>Action of animals</b>     |
19. Mention any **one** condition under which essential drugs can be stored.
- **Keeping drugs away from direct sunlight**
  - **Keeping drugs away from moist places**
  - **Keeping drugs in dust free places**
  - **Keeping drugs out of reach of children**
- Advice: Guide learners on the reasons why essential drugs should be kept under each condition mentioned above.

20. How is the movement of hip joint different from that of knee joint?
- **A hip joint allows body movement in three plane while a knee joint allows body movement in only one plane**
  - Reject: A hip joint allows body movement in allow directions while a knee joint allows body movement in only one direction)
  - **Advice:** *revise with candidates joints, muscles and bones extensively.*
  - *Let candidates know that movable and immovable joints are not types of joints but descriptions of the actions of joints in the body*
  - *Types of joints are ball and socket joints, hinge joints, gliding joints, suture joints and pivot joints*
21. State any **one** characteristic of forms of energy.
- **They make work possible**
  - **They are capable of doing work**
  - **They have the ability to do work**
  - **They can be transformed from one form to another**
  - **They cannot be destroyed**
  - **They cannot be created**
22. State any **one** activity carried out by school children to promote cleanliness at school.
- **Mopping classroom floors**
  - **Sweeping rubbish**
  - **Picking rubbish**
  - **Scrubbing toilets or latrines**
  - **Burning rubbish**
  - **Proper use of toilets /latrines**
23. Give any **one** way in which heat transfer by radiation is important to people.
- **Helps in drying harvested crops**
  - **Helps in rain formation**
  - **Helps in drying wet clothes and bedding.**
  - **Helps to preserve foodstuffs by sun drying**
  - **Enables people to warm themselves**
  - **Enables people to sun bathe.**
24. How is a black jack adapted to animal dispersal?
- **A black jack has hooks for attachment to the body of animals**
- Reject: feature alone.ie it has hooks
25. State the importance of bile juice during digestion.
- **Bile juice emulsifies fats /breaks down fats.**
  - **Bile juice nuetralizes chime.**

26. Apart from labour, give any **one** other requirement for starting a livestock farm.

- **Land**
- **Capital**

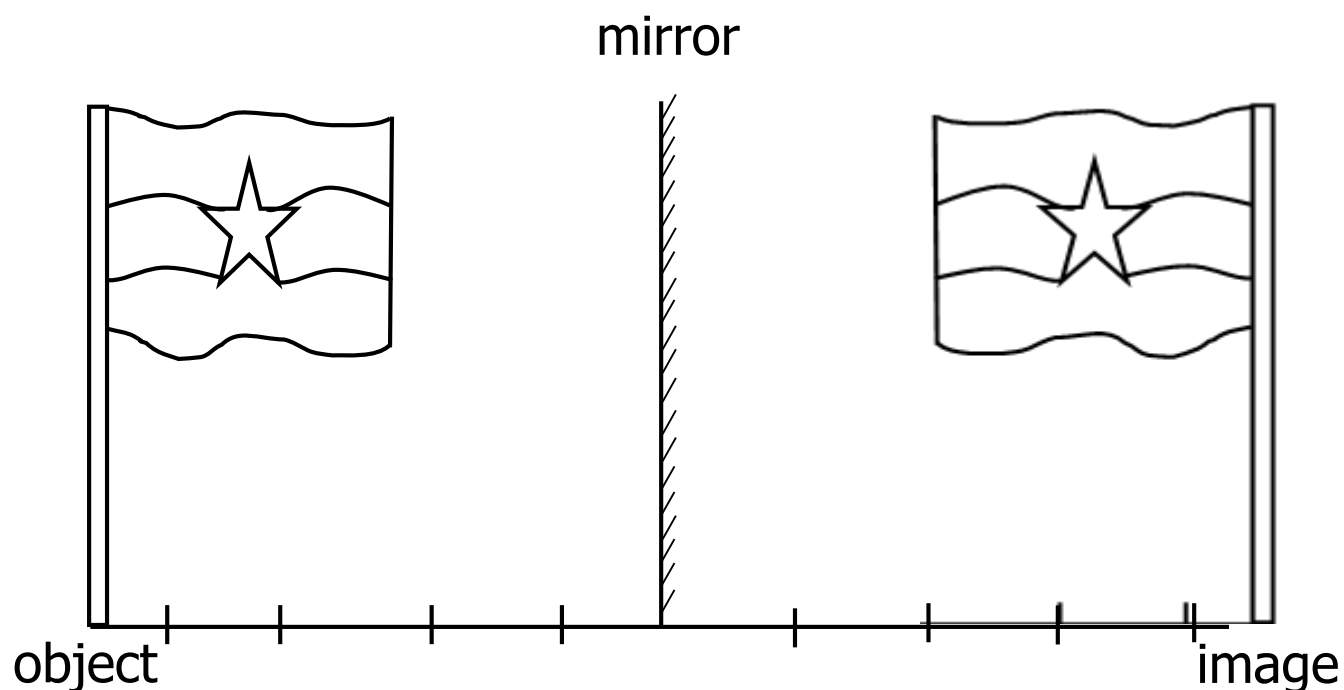
- **Management**
- **Market**

27. State the importance of oxygen during respiration.

- **Oxidizes glucose to produce energy**
- **Burns food in the body cells to produce or release energy in the body**

Advice: Take learners through the concept of the respiratory system

The diagram below shows an object placed in front of a mirror and it formed an object as shown. Study and answer the questions **28** and **29**.



28. Which type of mirror is shown in the diagram above?

- **Plane mirror**

29. Complete the diagram by drawing the image to show its appearance in the mirror.

30. Why does a person boiling water for preparing posho sprinkle some flour on water when it becomes hot?

- **To reduce the rate of evaporation for water to boil faster.**

31. Which element of Primary Health Care (PHC) helps to reduce infant mortality rate?

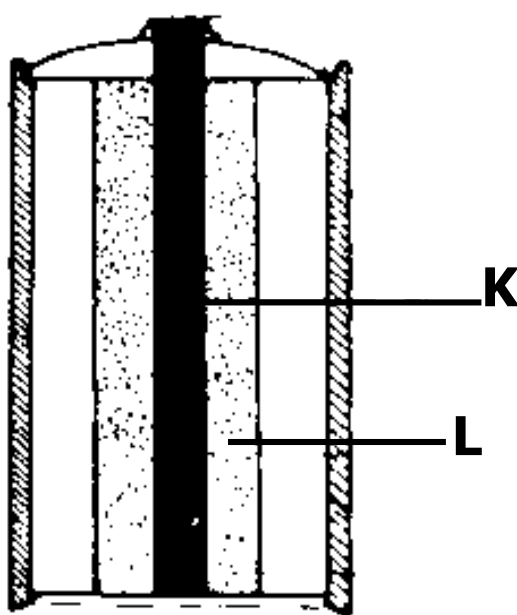
- **immunization**
- **health education**
- **control of communicable diseases**

32. Apart from cotton, name any **one** other example of a plant fibre.

- **Jute**
- **Linen**
- **Sisal**
- **Hemp**
- **Flax**

33. Which part of a billy is removed or destroyed during castration?  
 ▪ **testes/ testis/testicle/sperm duct**
34. Give any **one** disease that can break out through 4F<sup>s</sup> germ path.  
 • **Cholera** • **Dysentery**  
 • **Diarrhea** • **Typhoid**  
 Reject: trachoma/ebola.
35. What is the importance of spikes put on shoe soles?  
 • **Spikes increase the grip between shoe soles and the ground**  
 • **Spikes increase friction between the shoe sole and the ground.** (reject: spikes help in movement)

The diagram below shows a dry cell. Study and use it to answer questions **35** and **36**.

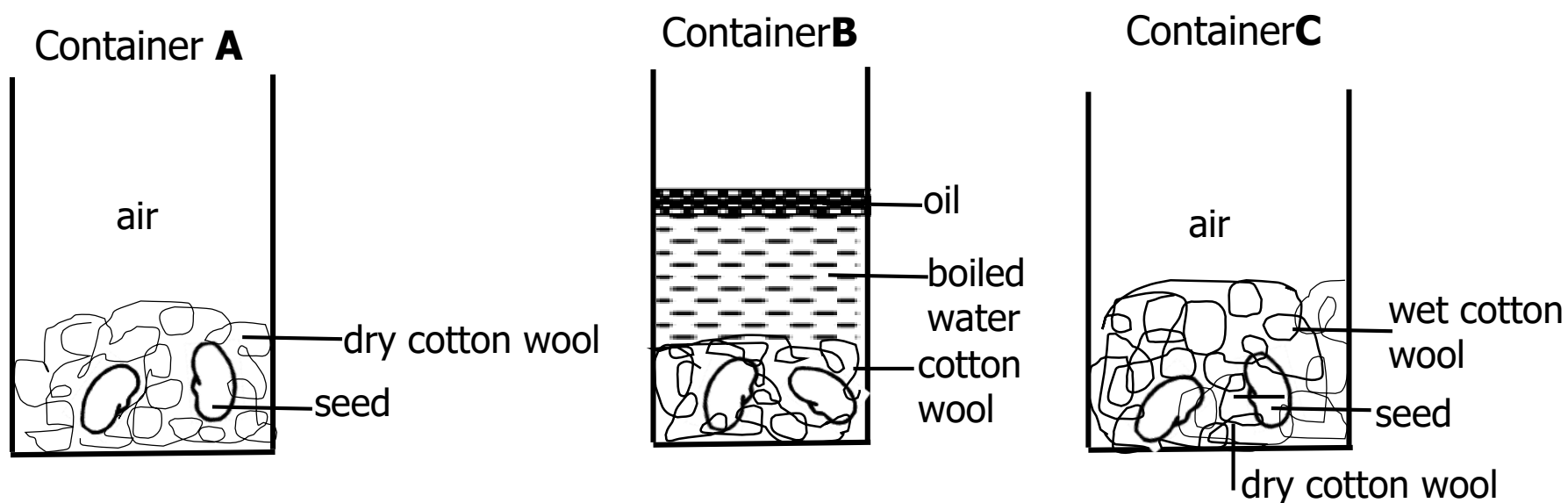


36. Name the part marked **K**.  
 • **Carbon rod**
37. State the function of the substance marked **L** in the dry cell.  
 • **To oxidise any hydrogen**  
 • **Depolarises hydrogen bubbles in a dry cell.**
38. Mention any **one** insect that uses mandibles for feeding.  
 • **Cockroach/grasshopper/locust/cricket/termite**
39. Why would you encourage a victim with nose bleeding to breathe through the mouth?  
 • **To reduce the pressure of blood flowing through the mouth**
40. Name the method of purifying water which provides water for mixing drugs in hospitals.  
 • **Distillation**



## SECTION B:

41. a) Name the part of the digestive system that;  
(i) absorbs water **Colon** (reject: Large intestines)  
(ii) rolls food into a bolus **Tongue**
- b) What is the major cause of constipation in digestion?  
• **Lack of roughages in the body**
- c) State any **one** way of keeping the digestive system in proper working condition.  
• **Feeding on a balanced diet**  
• **Proper chewing of food before swallowing**  
• **Eating well-cooked food**  
• **Drinking boiled water**  
• **Doing regular physical exercises**  
• **Limiting alcohol intake**  
• **Eating plenty of fruits and vegetables**  
• **Washing hands before eating food**
42. a) Write down any two causes of near drowning.  
• **Failure to swim** • **Inability to swim**  
• **Being drunk while in deep water**  
• **Attack by a disease while swimming**
- b) Why is a person giving first aid to a near drowned person advised to  
(i) compress the victim's chest? **To push water out of the lungs.**  
(ii) apply kiss of life? **To open air ways/ to induce breathing/to restart breathing**
43. The diagram below shows an experiment about germination.  
Study it carefully and answer questions that follow.



- a) In which of the containers will the seeds germinate after some days?  
• **Container C**



- b) Why would the seeds in the container you have identified germinate?
- **Presence of all necessary conditions for germination of seeds/presence of oxygen, warmth and moisture in the container which are required by the seeds to germinate**
- c) Give **one** effect of oil on the seeds in container **B**.
- **Blocks oxygen supply to the seeds**
  - **Makes seeds fail to germinate**
  - **Causes seed dormancy.**
- d) State the role of the condition which is absent in container **A** during germination.
- **Dissolves food for the embryo**
  - **Softens the testa for the embryo to pass.**

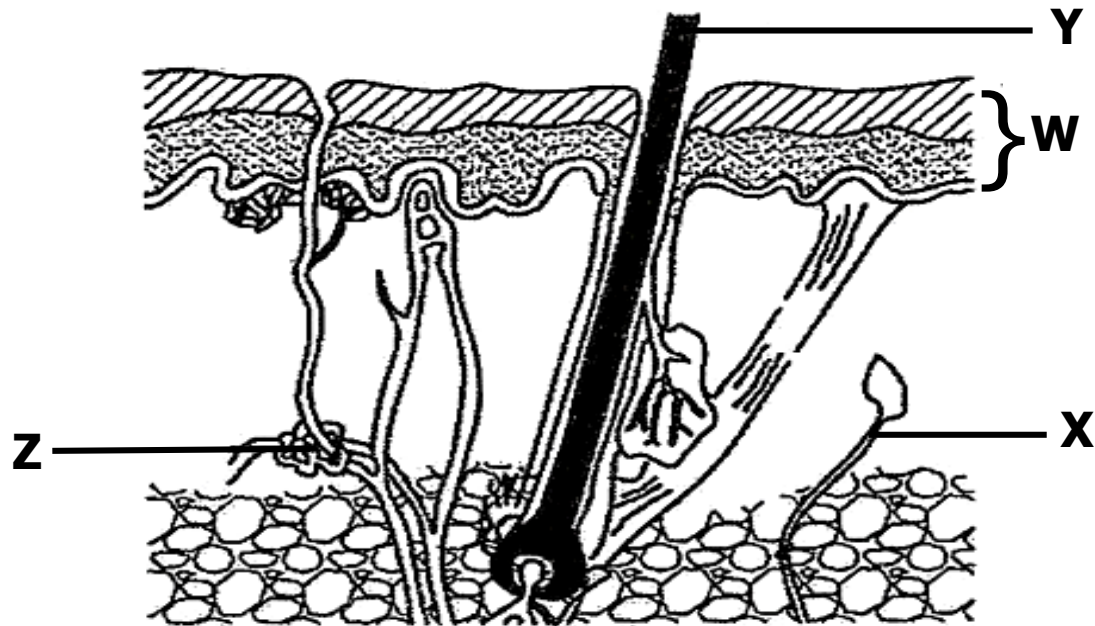
44. a) Give any **two** examples of poisonous snakes.
- **Cobra**
  - **Mamba**
  - **Vipers**
  - **Puff adder**
- b) State any **one** characteristic of poisonous snakes.
- **They have fangs**
  - **They have triangular head**
  - **They have poison glands that store venom**
- c) Apart from snakes, mention any **one** other example of a reptile.
- **Crocodiles/alligators/lizards/geckos/turtles/tortoise/terrapins.**
45. In the table below, part **A** shows blood components and part **B** shows their functions.

<b>Part A: Components</b>	<b>Part B: Function</b>
Blood plasma	Help in blood clotting
Red blood cells	Fight against disease germs
White blood cells	Carries digested food nutrients
Blood platelets	Carry oxygen in the body

Select from the table the correct function of a blood component and write it in the space provided below.

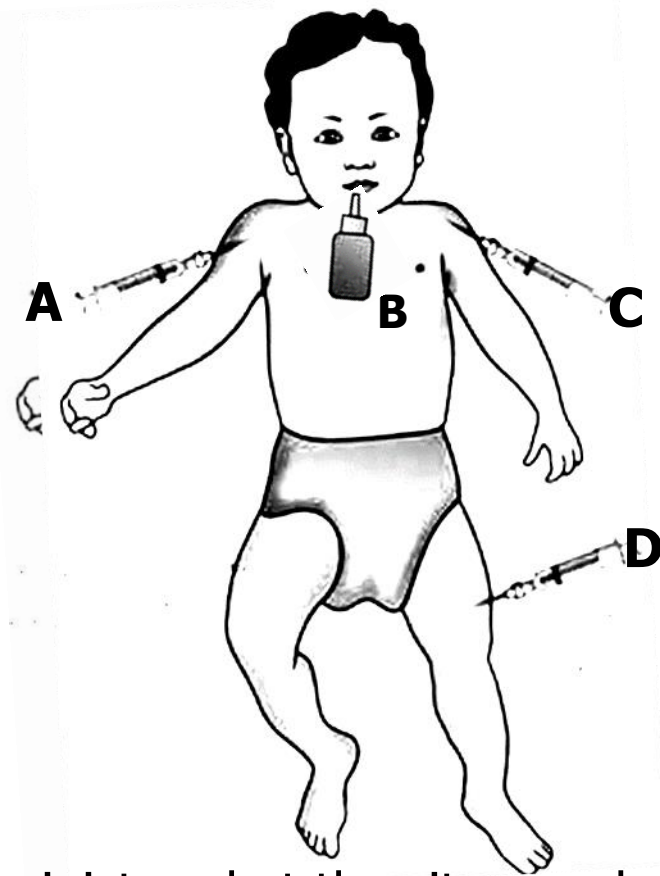
- (a) Blood plasma **Carries digested food nutrients**
- (b) Red blood cells **Carry oxygen in the body**
- (c) White blood cells **Fight against disease germs**
- (d) Blood platelets **Help in blood clotting**

46. The diagram below is of a human skin. Study and use it to answer the questions that follow.



- a) Name the layer marked **W**.  
• **Epidermis**
- b) State the function of part marked **X**.  
• **Transmits impulses for heat and touch to the brain**  
• **Enables the skin to detect change in temperature**
- c) Why does part marked **Y** stand upright on a cold day?  
• **To trap escaping heat from the body.**
- d) What substance is produced by part marked **Z**?  
• **Sweat.**
47. a) Identify the method of grazing where cattle are fed on prepared pasture from indoors.  
• **Zero grazing**
- b) State any **two** advantages of the above method of grazing cattle.  
• **Requires less land**  
• **Cattle are protected from thieves, wild animals and harsh weather**  
• **Easy collection of dung for manure**  
• **Record keeping is easy**  
• **There is no wastage of feeds**  
• **The farmer gets time to do other activities**
- c) Give any **one** reason why the above method of grazing cattle is used by few farmers.  
• **Expensive to start and maintain**  
• **Requires a lot of labour**  
• **Few animals are kept**  
• **Animals need a lot of attention and care**  
• **There is easy spread of diseases in case of outbreak**

48. The diagram below shows how different vaccines are administered on the baby's body. Study and use it to answer the questions that follow.



- a) Name the vaccines administered at the sites marked **A** and **C**.
- A BCG vaccine**
  - C Measles vaccines**
- b) Mention any **one** disease that is immunised against using the vaccine administered at the site marked **D**.
- diphtheria**
  - pertussis(whooping cough)**
  - haemophilus influenza**
  - tetanus**
  - hepatitis B**
- (Reject: diphtheria, pertusis, haemophillia)
- c) How is the vaccine administered at site **B** different from the one administered at site **C**?
- The vaccine at site B is administered orally while the vaccine at site C is administered through injection.**
- (Reject: the vaccine at site B is administered through the mouth while the vaccine at site C is administered at the left upper arm)

49. A patient was not feeling well. When the nurse measured her body temperature, it had increased by  $3^{\circ}\text{C}$ .

- a) What was the body temperature of the patient?

**Normal body temperature** =  $37^{\circ}\text{C}$

**Increased bdy temperature** =  $3^{\circ}\text{C}$

**Patient's body temperature**  $37^{\circ}\text{C} + 3^{\circ}\text{C}$   
=  $40^{\circ}\text{C}$

b) Convert the body temperature above to Fahrenheit scale.

$$^{\circ}\text{F} = \left(\frac{9}{5} \times ^{\circ}\text{C}\right) + 32$$

$$^{\circ}\text{F} = \left(\frac{9}{5} \times 40\right) + 32$$

$$= (9 \times 8) + 32$$

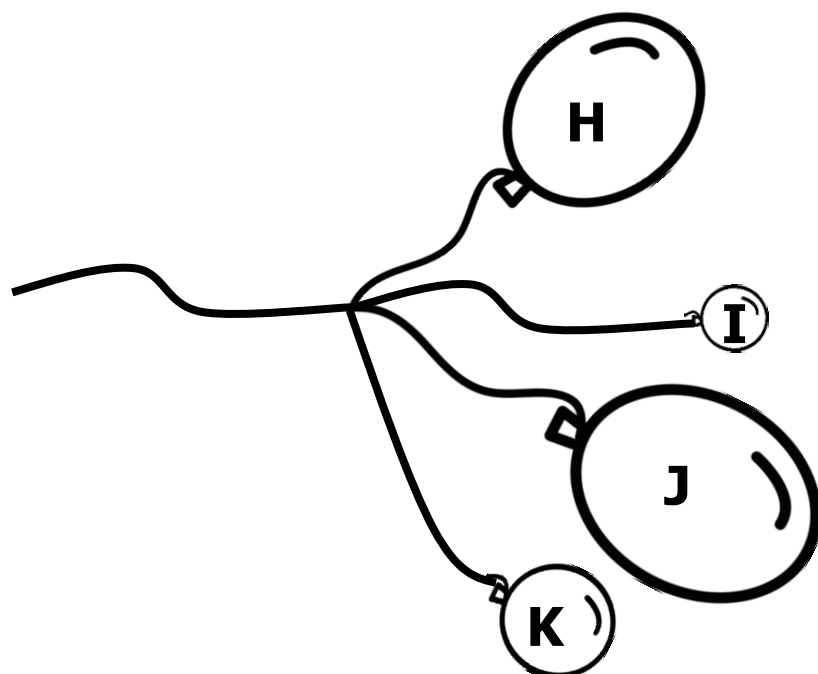
$$= 72 + 32$$

$$= \underline{\underline{104^{\circ}\text{F}}}$$

c) State any **one** difference between heat and temperature.

- **Heat is measured in joules(calories) while temperature is measured in degrees(kelvins)**  
**Heat is measured using a calorimeter while temperature is measured using a thermometer**
- **Heat increases temperature while temperature makes matter or a place hot or cold.**

50. The diagram below is of balloons representing different gases in the atmosphere. Study and use it to answer the questions that follow.

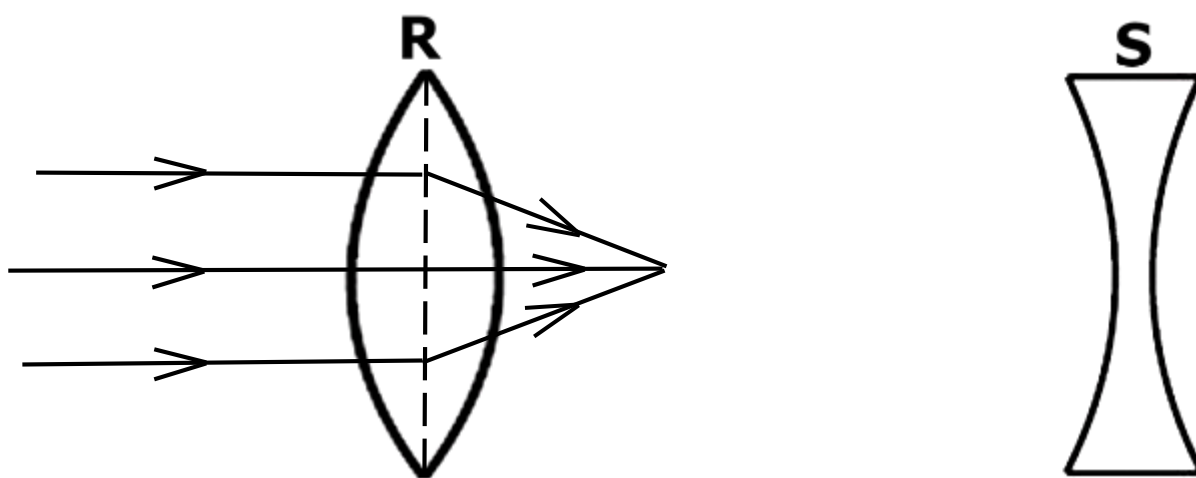


- a) Name the gas represented by the balloon marked **H**.
- **oxygen**
- b) Which balloon represents the gas with the least percentage in the atmosphere?
- **Balloon 1** (reject carbon dioxide)

- c) State any **one** use of the gas represented by balloon **J**.
- **Used in electric bulbs**
  - **Used to preserve semen for artificial insemination**
  - **Used by legumes to make plant proteins**
  - **Used in food packaging**
  - **Used as a refrigerant**
  - **Used to make ammonia gas for making ammonium nitrate fertilizers**
- d) Mention any **one** gas that can be found in balloon marked **K**.
- **Argon/xenon/krypton/neon/radon/helium**

51. a) Why do earthworms come out of the soil after it has rained?
- **To breathe /To get air for breathing**  
(Reject: to breathe in oxygen/to get oxygen)
- b) Give any **two** ways in which earthworms are important in the soil.
- **Earthworms aerate the soil**
  - **Earth worms break down plant matter to form humus**
  - **Their wastes add humus to the soil**  
(Reject: Earth worms die and form humus)
- c) State the reason why an earthworm dies when oil is poured on its body.
- **Oil closes/blocks the breathing pores on its moist skin**  
(Reject: oil causes suffocation)

52. The diagram below shows types of lenses. Study and use it to answer the questions that follow.



- a) Name the type of lens marked **R**.
- **Convex lens**
- b) Which eye defect is corrected using the type of lens marked **S**?
- **Short sightedness/myopia/short sight.**

- c) State any **one** cause of the eye defect you have given in (b) above.
- **Too long eye ball(elongated eyeball)**
  - **Too thick eyeball.**
- d) Draw light rays on the lens marked **R** to show how the beam of light behaves on it.

**NOTE: Clearly take note of the following:**

- **Drawing light rays using a pencil**
- **Showing light rays with arrow head**
- **Drawing a dotted line in the middle of the lens**
- **The way light rays converge through the lens**

53. a) State the reason why tree logs for making charcoal are;
- (i) covered with soil - **To prevent heat loss from the furnace.**  
- **To conserve heat in the furnace.**
- (ii) burnt under limited oxygen supply. – **To prevent wood from burning to ash.**
- b) Give any **one** way in which charcoal burning affects the environment.
- **Leads to reduced rainfall.**
  - **Destroys habitats for wild animals.**
  - **Causes soil erosion.**
  - **Leads to global warming.**
  - **May lead to landslides in mountainous areas.**
  - **May lead to extinction of some tree species.**
  - **Smoke from the charcoal furnace causes air pollution.**
- c) Apart from charcoal, write down any **one** other example of wood fuel.
- **Firewood // saw dust // wood shavings.**  
(Reject: Briquettes / saw dust )
54. a) Write down any **two** secondary sex changes that occur in both adolescent girls and boys.
- **Growth of pubic hair**
  - **Sweat glands become more active**
  - **Growth of hair under the armpits**
  - **Reject the voices change/change of voices)**

b) In which way is each of the following important to a foetus during pregnancy?

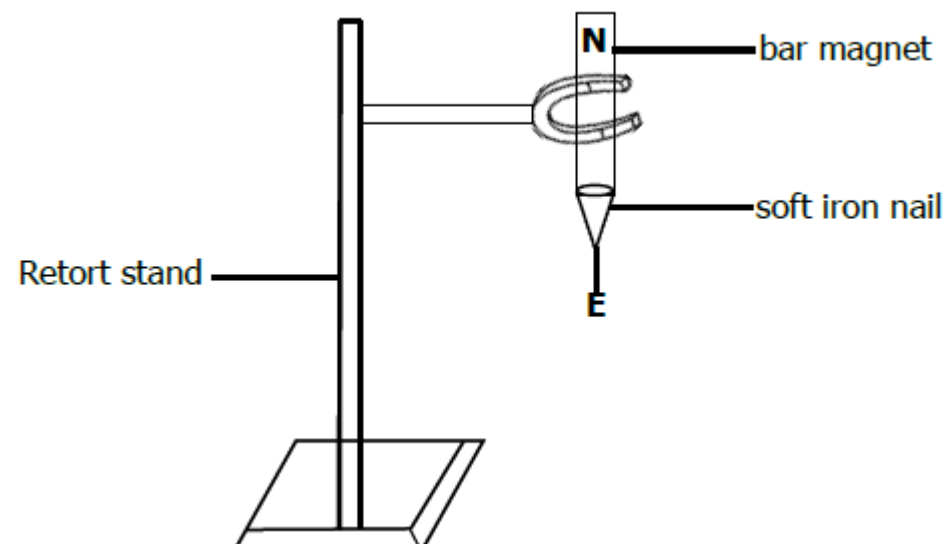
(i) Placenta

- **Supplies oxygen and food nutrients to the foetus**
- **Receives and stores waste materials from the foetus**
- **Prevents mother's blood from mixing with that of the foetus**
- **Attaches the embryo to the uterus**
- **Stores food and oxygen for the embryo**

(ii) Umbilical cord

- **Joins the foetus to the placenta**
- **Transports oxygen and food nutrients from the placenta to the foetus**
- **Transports waste materials from the foetus to the placenta**

55. The diagram below shows a method of making temporary magnets. Study carefully and use it to answer the questions that follow.



- a) Name the method of making temporary magnets shown above.
- **Induction method**
- b) Identify the magnetic pole of the soft iron nail at **E**.
- **North pole**
- c) Mention any **one** factor which determines the strength of the magnet made the above method.
- **Strength of the magnet used**
  - **Nature of the material magnetized**
  - **Number of the magnet used**
- d) State the reason why a magnet made using the above method is regarded as a temporary magnet.
- **It loses its magnetism easily**
  - **It retains its magnetism for a short time**
  - **It does not retain its magnetism for long**
  - **It loses its magnetic power as soon as the source is removed**



[illegible]