

# YAAKA EXAMINATIONS

## PRIMARY LEAVING EXAMINATIONS

2024

INTEGRATED SCIENCE

Time allowed: 2 hours 15 minutes

Candidate's name : .....

Candidate's signature : .....

School Random number : .....

Read the following instructions carefully :

1. Do not write your **school** or **district name** anywhere on this paper.
2. This paper has two sections: **A** and **B**.  
Section **A** has **40** questions and section **B** has **15** questions. The paper has **15 printed papers** altogether.
3. Answer **all** questions. **All** the answers for both sections **A** and **B** must be shown in the spaces provided.
4. **All** working must be done using a **blue** or **black** ball point pen or ink. Any work done in pencil will **NOT** be marked except drawings and diagrams.
5. Unnecessary **changes** in your work and handwriting that cannot easily be read may lead to loss of marks.
6. Do not fill anything in the table indicated: "For examiners' use only" and the boxes inside the question paper.

FOR EXAMINER'S USE ONLY		
Qn. No.	MARKS	EXR'S NO.
1 - 10		
11 - 20		
21 - 30		
31 - 40		
41 - 43		
44 - 46		
47 - 49		
50 - 52		
53 - 55		
<b>TOTAL</b>		

## Section A: (40 Questions)

1. **Name the type of blood vessel that carries blood away from the heart.**

**Answer:** Artery

**Explanation:** Arteries carry oxygenated blood away from the heart to the rest of the body.

2. **What is the main function of the large intestine in the human digestive system?**

**Answer:** Absorption of water

**Explanation:** The large intestine absorbs water and salts from the remaining indigestible food matter.

3. **Name the gas that is necessary for combustion.**

**Answer:** Oxygen

**Explanation:** Oxygen is needed for burning or combustion to occur.

4. **State one reason why we boil drinking water.**

**Answer:** To kill germs

**Explanation:** Boiling water kills harmful bacteria, viruses, and parasites, making it safe to drink.

5. **What part of the plant is responsible for photosynthesis?**

**Answer:** Leaf

**Explanation:** The leaf contains chlorophyll which captures sunlight for photosynthesis.

6. **Name the type of soil that has the highest water retention capacity.**

**Answer:** Clay soil

**Explanation:** Clay soil particles are very small and tightly packed, which allows it to retain water well.

7. **Give one importance of the ozone layer to humans.**

**Answer:** Protects from harmful UV rays

**Explanation:** The ozone layer absorbs most of the sun's harmful ultraviolet radiation, protecting living organisms.

8. **What is the primary source of energy for the earth?**

**Answer:** The Sun

**Explanation:** The Sun provides the necessary light and heat energy that sustains life on Earth.

9. **Which nutrient is essential for the formation of red blood cells?**

**Answer:** Iron

**Explanation:** Iron is needed to produce hemoglobin, which is essential for carrying oxygen in red blood cells.

10. **Name the process by which plants lose water through their leaves.**

**Answer:** Transpiration

**Explanation:** Transpiration is the loss of water vapor from the aerial parts of a plant, primarily through stomata.

11. **Which part of the human body is responsible for pumping blood?**

**Answer:** The heart

**Explanation:** The heart pumps blood throughout the body, supplying oxygen and nutrients.

12. **Name the instrument used to measure temperature.**

**Answer:** Thermometer

**Explanation:** A thermometer measures temperature in degrees Celsius or Fahrenheit.

13. **What is the main component of natural gas?**

**Answer:** Methane

**Explanation:** Methane is the primary component of natural gas, used as a fuel.

14. **State one way of conserving water in homes.**

**Answer:** Fixing leaking taps

**Explanation:** Repairing leaks prevents water wastage.

15. **Which organ in the body filters waste from the blood?**

**Answer:** Kidneys

**Explanation:** The kidneys filter blood, removing waste products and excess water to form urine.

16. **What is the function of the chloroplast in plant cells?**

**Answer:** Photosynthesis

**Explanation:** Chloroplasts contain chlorophyll, which captures light energy for photosynthesis.

17. **Name the process by which seeds are spread away from the parent plant.**

**Answer:** Seed dispersal

**Explanation:** Dispersal helps reduce competition and increases the chance of survival for new plants.

18. **Which part of the eye helps to focus light?**

**Answer:** Lens

**Explanation:** The lens bends light rays to form a clear image on the retina.

19. **What is the chemical formula of water?**

**Answer:** H<sub>2</sub>O

**Explanation:** Water is made up of two hydrogen atoms bonded to one oxygen atom.

20. **Name the mineral necessary for strong bones and teeth.**

**Answer:** Calcium

**Explanation:** Calcium is vital for bone and teeth strength and development.

21. **Which sense organ helps us to hear?**

**Answer:** Ear

**Explanation:** The ear detects sound waves and converts them into signals sent to the brain.

22. **State one way in which plants help to reduce air pollution.**

**Answer:** Absorbing carbon dioxide

**Explanation:** Plants take in carbon dioxide during photosynthesis, reducing atmospheric CO<sub>2</sub>.

23. **What is the boiling point of water at sea level?**

**Answer:** 100°C

**Explanation:** At standard atmospheric pressure, water boils at 100°C.

24. **Which gas is used by animals for respiration?**

**Answer:** Oxygen

**Explanation:** Animals breathe in oxygen for cellular respiration, which releases energy from food.

25. **Name the part of a plant that absorbs water and nutrients from the soil.**

**Answer:** Roots

**Explanation:** Roots anchor the plant and absorb water and minerals from the soil.

26. **What is the main function of the human skeletal system?**

**Answer:** Support and protection

**Explanation:** The skeleton provides structural support and protects vital organs.

27. **What is the term for animals that eat only plants?**

**Answer:** Herbivores

**Explanation:** Herbivores feed exclusively on plant material.

28. **Name the gas used in fire extinguishers.**

**Answer:** Carbon dioxide

**Explanation:** Carbon dioxide displaces oxygen, helping to put out fires.

29. **Which process involves the conversion of liquid water into vapor?**

**Answer:** Evaporation

**Explanation:** Evaporation occurs when water molecules gain enough energy to become gas.

30. **Name the process by which green plants make their own food.**

**Answer:** Photosynthesis

**Explanation:** Photosynthesis converts light energy, water, and carbon dioxide into glucose.

31. **State one way in which farmers can control pests in crops without using chemicals.**

**Answer:** Crop rotation

**Explanation:** Crop rotation disrupts pest life cycles and helps prevent infestations.

32. **Which type of simple machine is a seesaw?**

**Answer:** Lever

**Explanation:** A seesaw functions as a lever, with the fulcrum at the center.

33. **Name the gas that causes the greenhouse effect.**

**Answer:** Carbon dioxide

**Explanation:** Carbon dioxide traps heat in the atmosphere, contributing to global warming.

34. **What is the main source of dietary fiber?**

**Answer:** Plant foods, such as fruits and vegetables

**Explanation:** Dietary fiber is found in plant cell walls and aids in digestion.

35. **Which sense organ detects taste?**

**Answer:** Tongue

**Explanation:** The tongue has taste buds that detect different flavors.

36. **Name the part of a flower that produces pollen.**

**Answer:** Anther

**Explanation:** The anther is the part of the stamen that releases pollen.

37. **Which disease is caused by a lack of vitamin C?**

**Answer:** Scurvy

**Explanation:** Scurvy causes symptoms like bleeding gums due to vitamin C deficiency.

38. **What is the function of the respiratory system?**

**Answer:** To exchange gases

**Explanation:** The respiratory system facilitates the intake of oxygen and expulsion of carbon dioxide.

39. **Which tool is used to measure force?**

**Answer:** Spring balance

**Explanation:** A spring balance measures the force applied to it using a calibrated spring.

40. **Name the organ that controls body temperature.**

**Answer:** Hypothalamus

**Explanation:** The hypothalamus regulates body temperature through feedback mechanisms.

### **Section B: (15 Questions)**

41. (a) **Name two types of simple machines found at home.**

(i) Pulley

(ii) Lever

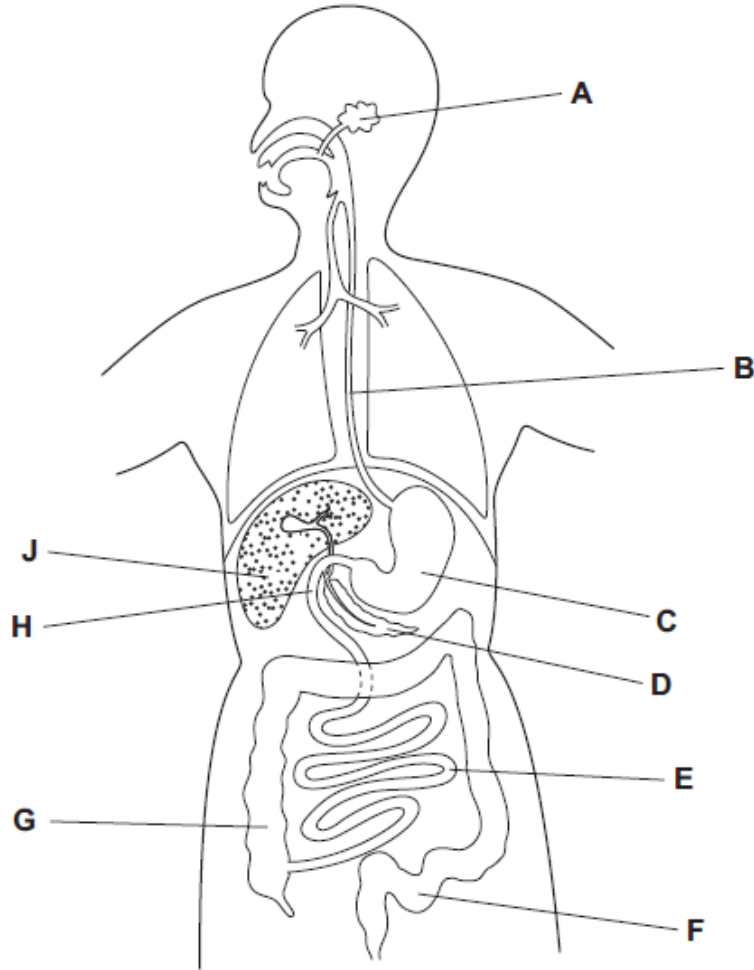
(b) **Explain how a lever makes work easier.**

**Answer:** A lever reduces the amount of force needed by increasing the distance over which the force is applied.

(c) **Draw and label a diagram of a wheelbarrow as a lever.**

**Explanation:** Simple machines make work easier by reducing the effort needed to perform a task.

42. **The diagram below shows parts of a human digestive system. Name parts C and E.**



**Fig. 1.1**

**Answer:** C: Stomach, E: Small intestine

**Explanation:** The stomach stores and breaks down food, while the small intestine absorbs nutrients.

*(Diagram: Digestive system with parts labeled.)*

43. (a) **State any two methods of food preservation.**

- (i) Drying
- (ii) Freezing

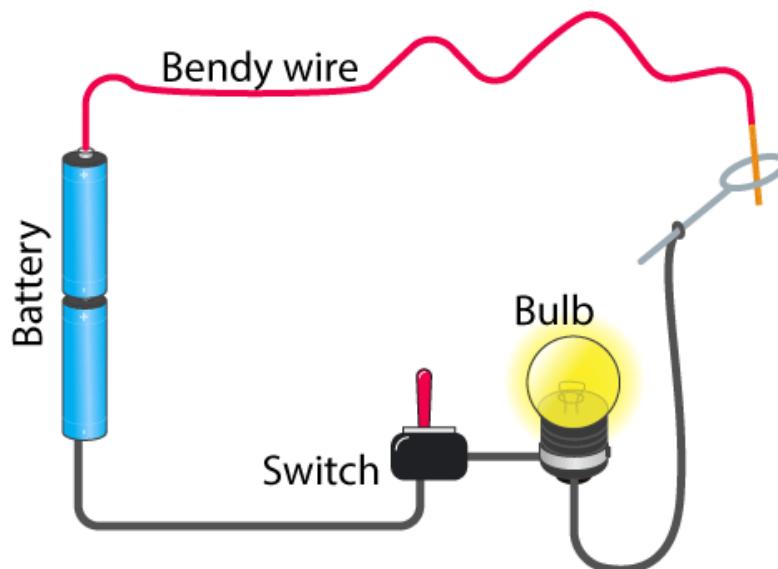
(b) **Explain why food preservation is important.**

**Answer:** Preservation prevents spoilage and prolongs the shelf life of food.

**Explanation:** Preserving food helps prevent the growth of microorganisms that cause spoilage.

44. **The diagram below shows a simple electric circuit. Label**

the components.



**Answer:** Battery, bulb, wires, switch

**Explanation:** The circuit allows current to flow from the battery through the bulb, lighting it up.

45. (a) **State any two effects of heat gain on matter.**

- (i) Expansion
- (ii) Change of state

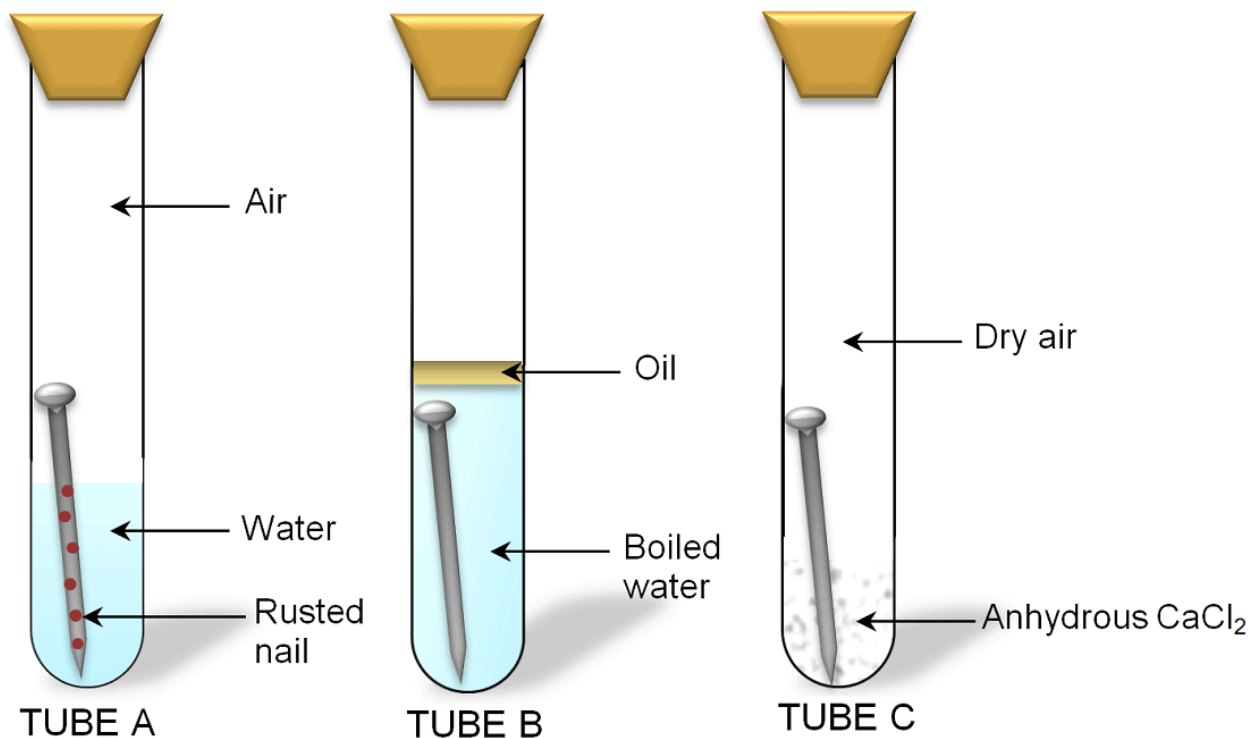
(b) **Explain why a metal expands when heated.**

**Answer:** Heat causes particles to move faster and spread apart.

**Explanation:** Increased kinetic energy causes atoms in a solid to vibrate more, expanding the material.

46. **The diagram below shows an experiment on rusting. What conditions are needed for rusting?**





**Answer:** Water and oxygen

**Explanation:** Rusting occurs when iron reacts with water and oxygen to form iron oxide.

(Diagram: Iron nails in different conditions with labels.)

47. (a) **Describe one way of preventing malaria.**

**Answer:** Using mosquito nets

**Explanation:** Mosquito nets prevent bites from malaria-carrying mosquitoes.

(b) **Explain the role of vaccines in disease prevention.**

**Answer:** Vaccines stimulate the immune system to recognize and fight pathogens.

48. **Explain the role of the kidney in excretion.**

**Answer:** The kidney filters waste from the blood, forming urine.

**Explanation:** It removes urea, excess salts, and water from the bloodstream.

49. (a). **Name the parts of the flower shown in the diagram.**



**Answer:** Petal, stigma, anther

**Explanation:** The stigma receives pollen, the anther produces pollen, and petals attract pollinators.

*(Diagram: Labeled flower.)*

50. (a) **State one way in which cattle farming contributes to the development of the leather industry.**

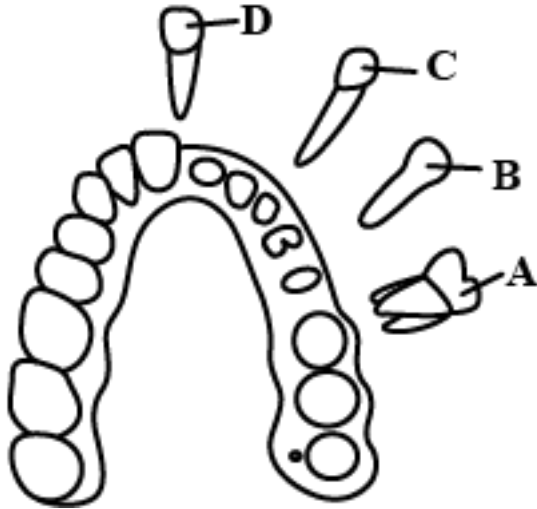
**Answer:** Provides raw hides and skins.

(b) **Name another industry that uses cattle products.**

**Answer:** Dairy industry

**Explanation:** Cattle provide raw materials like hides, milk, and meat for various industries.

51. **The diagram below shows an arrangement of teeth. Identify the types of teeth labeled D, C, and A.**



**Answer:** D: Incisors, C: Canines, A: Molars

**Explanation:** Incisors cut food, canines tear it, and molars grind it down.

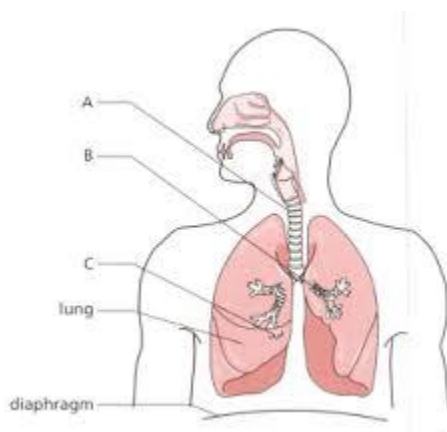
*(Diagram: Labeled human teeth.)*

**52. Describe the process of photosynthesis.**

**Answer:** Photosynthesis is the process by which green plants make food using sunlight, carbon dioxide, and water.

**Explanation:** The chloroplasts in plant cells capture sunlight, which is used to convert carbon dioxide and water into glucose.

**53. Name the parts of the human respiratory system labeled in the diagram.**



**Answer:** A: Trachea, B: Bronchus

**Explanation:** The trachea carries air to the lungs, where gas exchange occurs.

*(Diagram: Labeled respiratory system.)*

**54. (a) State one way to prevent soil erosion on farmlands.**

**Answer:** Planting cover crops

**(b) Why is it important to prevent soil erosion?**

**Answer:** To maintain soil fertility and prevent land degradation.

**Explanation:** Erosion removes the top layer of soil, which is rich in nutrients.

**55. Explain the importance of the water cycle to living organisms.**

**Answer:** The water cycle provides fresh water to ecosystems, which is essential for all life.

**Explanation:** Processes like evaporation, condensation, and precipitation replenish water sources.

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