

12.0 SCIENCE



THE KENYA NATIONAL EXAMINATIONS COUNCIL

KCPE 2014

1450721

SCIENCE

1 hour 40 minutes

INSTRUCTIONS TO CANDIDATES (Please read these instructions carefully)

1. You have been given this question booklet and a separate answer sheet. The question booklet contains 50 questions.
2. Do any necessary rough work in this booklet.
3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question booklet.

HOW TO USE THE ANSWER SHEET

4. Use an ordinary pencil.
5. Make sure that you have written on the answer sheet:
YOUR INDEX NUMBER
YOUR NAME
NAME OF YOUR SCHOOL
6. By drawing a **dark line** inside the correct numbered boxes mark your full Index Number (i.e. School Code Number and the three-figure Candidate's Number) in the grid near the top of the answer sheet.
7. Do not make any marks outside the boxes.
8. Keep the sheet as clean as possible and do not fold it.
9. For each of the questions 1–50 four answers are given. The answers are lettered A, B, C and D. In each case only **ONE** of the four answers is correct. Choose the correct answer.
10. On the answer sheet the correct answer is to be shown by drawing a **dark line** inside the box in which the letter you have chosen is written.

Example

In the Question Booklet.

4. Which one of the following components of blood is involved in clotting after injury?
A. Plasma
B. White blood cells
C. Red blood cells
D. Platelets.

The correct answer is D.

On the answer sheet:

4 [A] [B] [C] [D] **14** [A] [B] [C] [D] **24** [A] [B] [C] [D] **34** [A] [B] [C] [D] **44** [A] [B] [C] [D]

In the set of boxes numbered **4**, the box with the letter D printed in it is marked.

11. Your **dark line** **MUST** be within the box.
12. For each question **ONLY ONE** box is to be marked in each set of four boxes.



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This question paper consists of 7 printed pages.

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TURN OVER

- In the human body digested food is absorbed in the
 - stomach
 - large intestines
 - rectum
 - small intestines.
- The diagram below represents a certain type of human tooth.



The function of the tooth is

- gripping and tearing
 - tearing and grinding
 - crushing and grinding
 - biting and crushing.
- A certain person looked healthy and strong but tested positive for HIV/AIDS. In which one of the following stages of HIV/AIDS was the person likely to be?
 - Window.
 - Incubation.
 - Symptomatic.
 - Full blown.
 - The following are sexually transmitted infections **except**
 - syphilis
 - gonorrhoea
 - bilharzia
 - chancroid.
 - Which one of the following pairs consists of planets with the longest orbits?
 - Mars and Mercury.
 - Venus and Jupiter.
 - Earth and Saturn.
 - Neptune and Uranus.

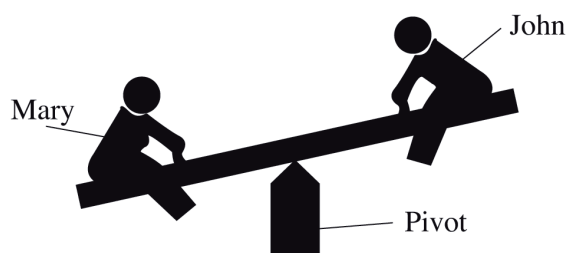
- In order to make a certain weather instrument, a pupil assembled the following materials:
Glass bottle, ink, biro pen tube, nails, manilla paper and water.
Which one of the following instrument was the pupil likely to make?
 - Wind vane.
 - Liquid thermometer.
 - Rain gauge.
 - Windsock.
- The following are some adaptations of plants that grow in wet environment **except** having
 - large flat leaves
 - leaves with waxy upper surface
 - thick leaf cuticle
 - an increased number of stomata.
- Which one of the following groups consists **only** of field pests?
 - Weavils, aphids and weaver birds.
 - Aphids, weaver birds and white ants.
 - Weavils, white ants and stalkborer.
 - Aphids, weaver birds and stalkborer.
- Which one of the following is a characteristic of amphibians?
 - Lay their eggs on land.
 - Live partly in water.
 - Have moist skin with scales.
 - Adults breathe through gills.
- The diagram below represents a beak of a certain bird.



The bird represented is a

- filter feeder
- grain eater
- nectar feeder
- fish eater.

11. In which one of the following activities is water used in industries?
- Cleaning tools and equipment.
 - Preparation of soft drinks.
 - Washing cars.
 - Watering plants.
12. Which one of the following is an advantage of hard water?
- Saves soap during washing.
 - Lathers easily with soap.
 - Forms scum with soap.
 - Suitable for drinking.
13. Mary and John were playing on the see-saw as shown in the diagram below.



In order to balance on the see-saw

- John should move towards the pivot
 - Mary should move away from pivot
 - move the pivot towards John
 - move the pivot towards Mary.
14. The following are methods of maintaining simple tools:
- Cleaning after use
 - Proper storage
 - Sharpening cutting edges
 - Proper use of tools.
- Which pair consists **only** of methods for safety from accidents?
- (ii) and (iv).
 - (i) and (iv).
 - (ii) and (iii).
 - (i) and (iii).
15. Which one of the following components of air is used for preservation of soft drinks?
- Carbon dioxide.
 - Nitrogen.
 - Oxygen.
 - Inert gases.

16. Which one of the following pairs of processes are as a result of increase and decrease in temperature respectively?

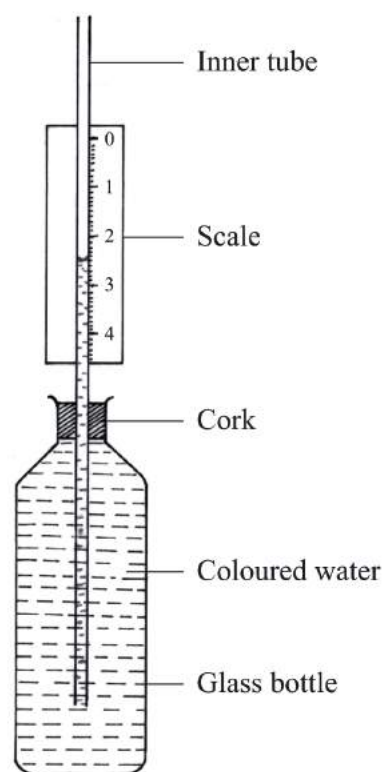
increase

decrease

- | | |
|----------------|---------------|
| A. Freezing | Condensation. |
| B. Expansion | Evaporation. |
| C. Contraction | Expansion. |
| D. Melting | Condensation. |
17. Which one of the following statements is **true** about liquids and gases?
- Liquids have definite volume.
 - Gases have definite volume.
 - Liquids have definite shape.
 - Gases have definite shape.
18. A mixture of salt solution, maize grains and iron filings can be separated by
- filtering, use of magnet, evaporation
 - decanting, picking, winnowing
 - filtering, decanting, evaporation
 - winnowing, use of magnet, picking.
19. The energy transformation that takes place when a torch that uses batteries is switched on is
- electrical → chemical → heat → light
 - electrical → heat → chemical → light
 - chemical → electrical → light → heat
 - chemical → electrical → heat → light.
20. Formation of a rainbow can be demonstrated by the following activities **except** when
- observing the sun through a horizontally-held transparent biro pen casing
 - placing a mirror in water to face the sun
 - spraying water in the air from the mouth in bright sunshine
 - placing a biro pen casing on water in a glass container.
21. Which one of the following is a source of electricity?
- Torch.
 - Dam.
 - Solar panel.
 - Biogas plant.

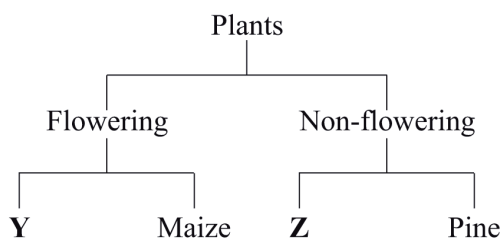
22. Which one of the following consists of foods that are **mainly** for body building?
- beef, cassava, potatoes.
 - mutton, maize, pawpaw.
 - peas, beans, eggs.
 - carrots, bananas, tomatoes.
23. Which one of the following groups of symptoms is **correctly** matched with the deficiency disease?
- | | | |
|---------------------|----------------|--------------------|
| Rickets | Anaemia | Kwashiorkor |
| A. Bowlegged, | brown hair, | wrinkled face. |
| B. Knock-kneed, | pale eyes, | potbellied. |
| C. Rapid heartbeat, | potbellied, | breathlessness. |
| D. Brown hair, | wrinkled face, | bowlegged. |
24. Which one of the following pairs consists **only** of components of environment that produce carbon dioxide?
- Air and plants.
 - Animals and plants.
 - Water and air.
 - Soil and animals.
25. Use of excess fertilisers will **mainly** pollute
- soil and water
 - water only
 - soil and air
 - soil only.
26. Which one of the following components of blood is **correctly** matched with its function?
- | | |
|------------------------|--------------------|
| Blood component | Function |
| A. Red blood cells | clotting of blood. |
| B. White blood cells | transport oxygen. |
| C. Platelets | fight germs. |
| D. Plasma | transport food. |

27. The following are some effects of drug abuse:
- Rape
 - Addiction
 - Truancy
 - Impaired judgement
 - Drug induced accidents.
- Which one of the following consists only of social effects?
- (i) (ii) (iv).
 - (ii) (iii) (iv).
 - (i) (iii) (v).
 - (i) (iv) (v).
28. Pupils constructed a weather instrument shown below.



- The mistake made in the construction was
- using coloured water
 - placement of the scale
 - using a narrow tube
 - closing the cork tightly.
29. Which one of the following pairs consists **only** of plants that directly feed on insects?
- Pitcher plant and sundew.
 - Mushroom and butter wort.
 - Sunflower and pitcher plant.
 - Sundew and toadstool.

30. The chart below shows a simple classification of plants.



Which one of the following pairs represents **Y** and **Z**?

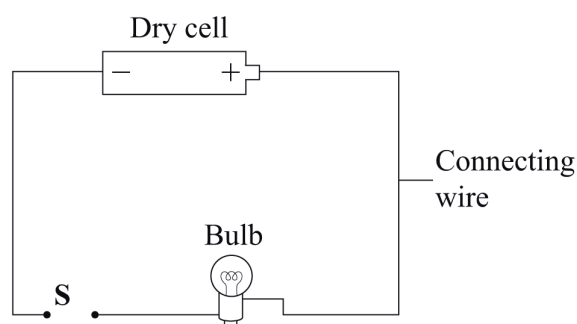
- | Y | Z |
|---------------|----------|
| A. Carrots | Sisal. |
| B. Kale | Onion. |
| C. Moss | Cypress. |
| D. Sugar cane | Fern. |

31. Which one of the following pairs consists **only** of farm animals that produce mutton?
- Cow and goat.
 - Goat and sheep.
 - Cow and sheep.
 - Sheep and pig.
32. The following are some characteristics of animals:
- Varying body temperatures.
 - Lay eggs.
 - Have scales.
 - Have a backbone.
- Which **two** characteristics are for **both** toad and duck?
- (i) and (iii).
 - (i) and (ii).
 - (ii) and (iv).
 - (iii) and (iv).
33. The method of grazing that would require the largest piece of land to practice is
- herding
 - stall feeding
 - tethering
 - paddocking.
34. Which of the following pairs of machines consists only of inclined planes
- Ladder and staircase.
 - Staircase and wheelbarrow.
 - Claw hammer and ladder.
 - Spade and crow bar.

35. In which one of the following is friction an advantage?
- Skating on ice.
 - Swimming in water.
 - Production of heat in moving parts.
 - Braking of a bicycle on a road.
36. In an investigation on factors affecting sinking and floating pupils carried out the following activities:
- placed a bottle top in water.
 - made the same bottle top into a ball and placed it on water.
- Which one of the following factors were the pupils investigating?
- Size.
 - Shape.
 - Type of material.
 - Mass.
37. Heat transfer in liquids and gases mainly takes place through
- radiation
 - convection and conduction
 - convection
 - conduction and radiation.
38. Which one of the following is a transparent material?
- Kerosine.
 - Mirror.
 - Frosted glass.
 - White paper.
39. Which one of the following is a safety measure against lightning when it is raining?
- Leaning against walls.
 - Walking on open areas.
 - Wearing rubber shoes.
 - Using an umbrella.
40. Which one of the following nutrients is required for the formation of blood in expectant mothers?
- Vitamin D.
 - Calcium.
 - Phosphorus.
 - Iron.

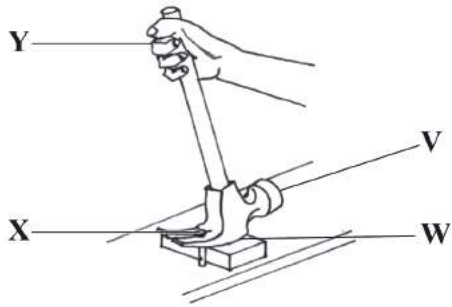
41. Which one of the following soil conservation measures is **least** suitable on a large piece of land?
- Terracing.
 - Mulching.
 - Tree planting.
 - Contour farming.
42. When pupils heated some garden soil, smoke was produced. The observation made indicated the presence of
- organic matter
 - air
 - mineral particles
 - water.
43. The following are some characteristics of soil:
- fine particles.
 - cracks when dry.
 - poor drainage.
 - good capillarity.
- The characteristics are for
- loam soil only
 - loam and sand soil
 - clay soil only
 - loam and clay soil.
44. Pupils went for a nature walk and observed a plant with yellow fruits and thorns on the stem. The plant observed was likely to be
- Mexican marigold
 - pig weed
 - black jack
 - sodom apple.
45. Which one of the following groups **only** consists of materials that are non-magnetic?
- Piece of glass, silver coin, cello tape.
 - Nail, steel wool, spoon.
 - Scissors, razor blade, piece of glass.
 - Staple pins, sowing needle, aluminium.

46. Which one of the following groups consists **only** of gases that comprise 0.03, 0.97 and 21 percentage in air respectively?
- Inert gases, oxygen and nitrogen.
 - Carbon dioxide, inert gases and oxygen.
 - Inert gases, carbon dioxide and nitrogen.
 - Carbon dioxide, oxygen and nitrogen.
47. Which one of the following is not a component of soil?
- Rock particles.
 - Water.
 - Plant.
 - Air.
48. The diagram below represents a set up that can be used to investigate good and poor conductors of electricity?



- Which one of the following materials when used to connect wires at point **S** would make the bulb **not** light?
- Pencil.
 - Aluminium foil.
 - Steel wool.
 - Rubber band.

49. The diagram below represents a claw hammer in use.



Which pair of the positions V, W, X and Y represents the load and pivot?

- A. V and Y.
 - B. W and X.
 - C. V and X.
 - D. W and Y.
50. In a certain investigation pupils sat at different positions around a pupil who was ringing a bell.
- Which one of the following aspects of sound were the pupils investigating?
- A. Special sounds.
 - B. Loud and soft sound.
 - C. Noise pollution.
 - D. Direction of sound.