

THE KENYA NATIONAL EXAMINATIONS COUNCIL

KCPE 2010

SCIENCE

Time: 1 hour 40 minutes

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 only.
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, show the correct answer 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.

This Question Paper consists of 7 printed pages and 1 blank page.

0507

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TURN OVER

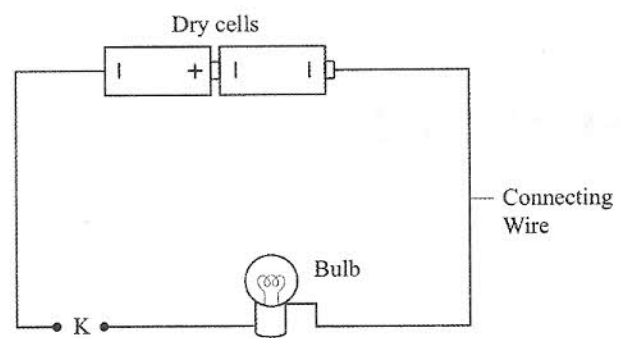
- Which one of the following pests attack seedlings?
 - Stalk borers.
 - Aphids.
 - Cut worms.
 - Weaver birds.
- Which one of the following pairs of vessels is **CORRECTLY** matched with the type of blood they carry?

Oxygenated blood	Deoxygenated blood
A. Aorta	pulmonary artery.
B. Vena cava	pulmonary vein.
C. Pulmonary artery	vena cava.
D. Aorta	pulmonary vein.
- Which one of the following pairs of parasites attacks both poultry and rabbits?
 - Mites and lice.
 - Lice and ticks.
 - Mites and fleas.
 - Ticks and mites.
- Which one of the following statements about a bean seed is **NOT CORRECT**?
 - The radicle develops into a shoot and plumule into a root.
 - The micropyle allows air and water to enter the seed.
 - The hilum is a scar where the seed was attached to the fruit wall.
 - The radicle emerges from the seed before the plumule during germination.
- The following are some characteristics of flowers:
 - small in size*
 - scented*
 - long feathery stigma*
 - produce fewer and large sticky pollen grains.*

Which one of the following pairs of characteristics is for a wind pollinated flower?

- (i) and (iv).
- (ii) and (iv).
- (ii) and (iii).
- (i) and (iii).

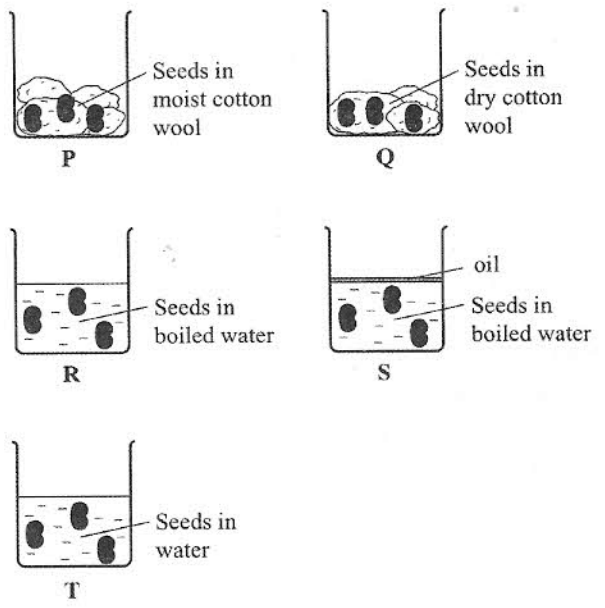
- The diagram below represents a set up that can be used to investigate good and poor conductors of electricity.



Which one of the following materials when used to connect wires at position K would make the bulb light?

- Piece of thread.
- Razor blade.
- Piece of glass.
- Cellotape.

- The diagrams below represent a set up used by pupils to investigate conditions necessary for seed germination.

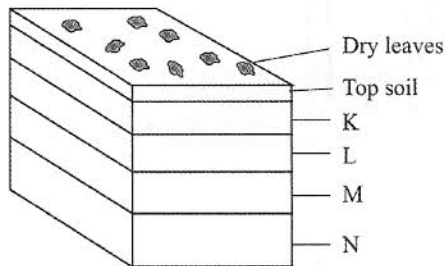


Germination occurred in

- Q, S and T
- P and Q
- P, R and T
- R and S.

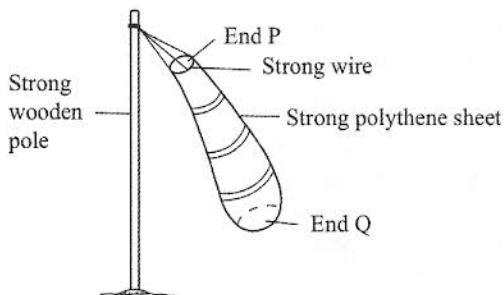
8. Which one of the following is an adaptation of plants in wet areas?
- Freshy leaves.
 - Fewer leaves.
 - Thick barks.
 - Broad leaves.

9. The diagram below represents an arrangement of materials in a compost manure heap.



In the diagram the layer of ash is represented by

- K
 - L
 - M
 - N.
10. The diagram below represents a windsock that was constructed by pupils.



Which one of the following is a reason why the instrument could not work?

- The sock is made up of a strong polythene sheet.
 - End Q is larger than end P.
 - A strong wire was used to make end P.
 - A long, strong wooden pole was used to suspend the sock.
11. Which one of the following pairs consists only of materials that would not sink in water even when their shape is changed?
- Wax and wood.
 - Wood and aluminium.
 - Aluminium and glass.
 - Glass and wax.

12. Which one of the following components of air is **NOT CORRECTLY** matched with its use?

Component of air	Use
A. Nitrogen	Used by plants to make proteins.
B. Carbon dioxide	Manufacture of soft drinks.
C. Oxygen	Manufacture of plant food.
D. Inert gases	In electric bulbs.

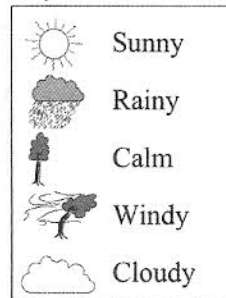
13. Which one of the following pairs of diseases are infants immunised against at the 9th month after birth?

- Tuberculosis and polio.
- Tetanus and whooping cough.
- Hepatitis B and diphtheria.
- Measles and yellow fever.

14. The chart below represents a weather record for five days.

Day	Morning	Afternoon
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		

Key

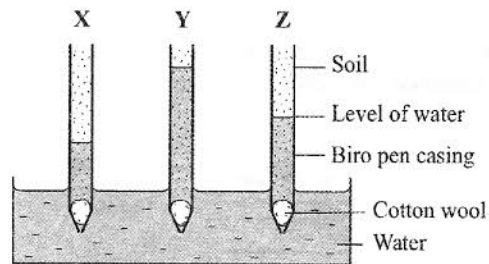


Which one of the following statements is **TRUE** about the weather chart?

- Whenever it was
- sunny in the morning, it was windy in the afternoon
 - cloudy in the morning, it was sunny in the afternoon
 - calm in the morning, it was sunny in the afternoon
 - windy in the morning, it rained in the afternoon.

15. Which one of the following statements is **TRUE** about some levers when in use?
- In a crowbar, the load is between the effort and the fulcrum.
 - In a crowbar, the effort is between the load and the fulcrum.
 - In a wheelbarrow, the fulcrum is between the load and the effort.
 - In a spade, the effort is between the load and the fulcrum.
16. Which one of the following statements is **NOT TRUE** about HIV/AIDS?
HIV/AIDS may be spread by
- sharing of unsterilised razor blades
 - coming in contact with other people's body fluids
 - shaking hands and hugging infected persons
 - transfusing unscreened blood.
17. Which of the following planets are in the **fifth** and **seventh** positions from the sun respectively?
- Mars and Saturn.
 - Jupiter and Uranus.
 - Jupiter and Saturn.
 - Mars and Uranus.
18. In the human body water is absorbed in the
- large intestines
 - small intestines
 - stomach
 - rectum.
19. Which one of the following pairs consists only of substances that are in the same state of matter?
- Oil and water vapour.
 - Wax and glue.
 - Ice and water.
 - Air and water vapour.

20. Pupils investigated capillarity in different types of soil. Their results were as shown in the diagram below.



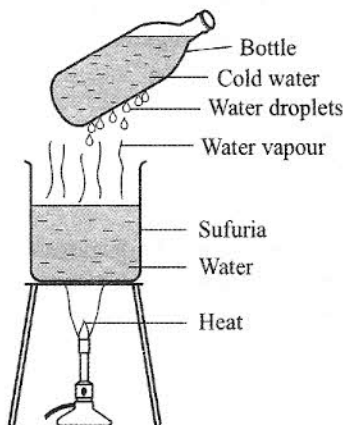
From the results the soil samples **X**, **Y** and **Z** are most likely to be

- | | X | Y | Z |
|----|----------|----------|----------|
| A. | Clay | Loam | Sand |
| B. | Sand | Clay | Loam |
| C. | Clay | Sand | Loam |
| D. | Sand | Loam | Clay |
21. In an experiment to investigate a certain component of soil, water was added to garden soil in a glass container. The component of soil investigated was
- air
 - mineral particles
 - living organisms
 - organic matter.
22. Which of the following organs in the human body both produce sex cells?
- Ovary and uterus.
 - Testis and penis.
 - Ovary and testis.
 - Penis and Vagina.
23. Tapeworms in livestock are found in the
- large intestines
 - stomach
 - lungs
 - small intestines.
24. Which one of the following mixtures can be separated by winnowing?
- Flour and husks.
 - Maize and millet.
 - Rice and sand.
 - Millet and husks.

25. Which one of the following groups of sources of energy consists of only sources that have chemical energy?
- Charcoal, kerosene, food.
 - Dynamo, drycell, firewood.
 - Biogas, hydroelectric power generator, matches.
 - Geothermal, generator, cooking gas, car battery.

26. Which one of the following groups of machines consists of inclined planes only?
- Ladder, spade, crowbar.
 - Staircase, ladder, a road winding up a hill.
 - Spade, staircase, ladder.
 - A road winding up a hill, crowhammer, crowbar.

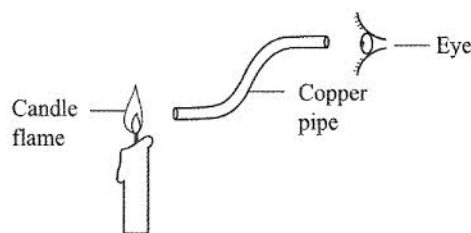
27. The diagram below represents a set up that is used to demonstrate a certain process.



The process investigated is

- evaporation
 - freezing
 - condensation
 - convection.
28. Which one of the following is **NOT** a method of conserving energy? Using
- a wind mill to pump water
 - biogas for cooking
 - solar panels to produce electricity
 - a traditional jiko for cooking.

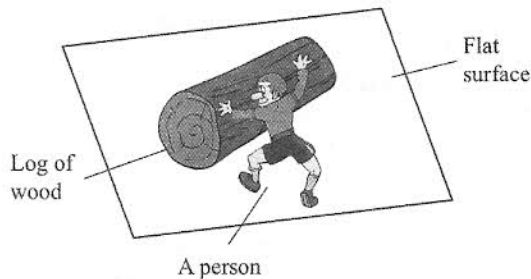
29. The diagram below represents a set up that is used to investigate a certain aspect of light.



The aspect investigated is

- light travels in a straight line
 - refraction
 - reflection
 - passage of light through materials.
30. Presence of blood in urine and faeces in human beings may be a sign of
- typhoid
 - bilharzia
 - malaria
 - cholera.
31. Which one of the following pairs of birds have their beaks adapted to the same type of feeding?
- Chicken and duck.
 - Sunbird and chicken.
 - Eagle and hawk.
 - Hawk and duck.
32. Which one of the following methods of preserving food is both modern and traditional?
- Salting.
 - Using honey.
 - Smoking.
 - Drying.
33. Which one of the following deficiency diseases is caused by lack of calcium in the diet?
- Anaemia.
 - Kwashiorkor.
 - Rickets.
 - Marasmus.
34. Which one of the following statements is **NOT TRUE** about commercial feeds for animals?
- They are given mainly for protection against diseases.
 - Some are given as the only feed.
 - They are given mainly to increase production.
 - Some are given together with other feeds.

35. Which one of the following pairs of components of the environment do all animals depend on directly?
- Soil and plants.
 - Air and water.
 - Soil and air.
 - Mineral salts and water.
36. Which one of the following foods is **CORRECTLY** matched to its group?
- | Food | Food group |
|---------------|----------------|
| A. Groundnuts | Energy giving. |
| B. Eggs | Protective. |
| C. Carrots | Energy giving. |
| D. Bananas | Body building. |
37. Which one of the following animal feeds provide a diet of proteins and carbohydrates?
- Clover and lucerne.
 - Sunflower seeds and barley grains.
 - Sunflower seeds and maize grains.
 - Lucerne and maize grain.
38. The diagram below represents a person pushing a heavy log of wood along a flat surface.



- Which one of the following changes would make the person push the log more easily?
- Smearing oil on the flat surface.
 - Wearing shoes with rough soles.
 - Smearing oil on the log of wood.
 - Placing rollers on the flat surface.
39. The following are some liquids:
- Water
 - Kerosene
 - Fresh milk
 - Cooking oil.
- Which two liquids will mix when put in a container?
- (i) and (iv).
 - (ii) and (iii).
 - (iii) and (iv).
 - (ii) and (iv).

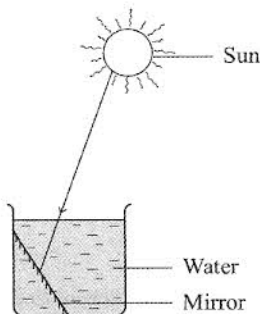
40. Which one of the following groups consists of materials that are **ALL** magnetic?
- Staple pins, scissors, metallic bottle top.
 - Silver coin, knife, marble balls.
 - Ball bearing, copper coin, razor blade.
 - Hack-saw, steel wool, aluminium plate.
41. Which one of the following practices pollutes soil, air and water?
- Use of all farm chemicals.
 - Burning of tyres and plastics.
 - Dumping of industrial waste.
 - Use of artificial fertilisers.
42. If medicine remains after taking the prescribed dose, it is advisable to
- keep and use it later
 - dispose of the medicine
 - continue taking until it is finished
 - give it to someone with the same sickness.
43. Which one of the following is most likely to cause damage to corrugated iron sheets on buildings? Gases from
- aerosol sprays
 - burning farm wastes
 - industries
 - sewage.
44. Which one of the following diseases **CANNOT** be prevented by maintaining proper hygiene?
- Typhoid.
 - Biharzia.
 - Cholera.
 - Malaria.
45. The beginning of energy transformations in a radio that uses dry cells is
- electrical
 - magnetic
 - chemical
 - sound.

46. The diagram below represents a safety sign when dealing with electricity.



The sign means

- A. do not insert objects into electric socket
 - B. do not use appliances with damaged plugs or wires
 - C. do not plug in many electrical appliances
 - D. do not get near.
47. The diagram below represents a set up used to investigate a certain aspect of light.



The aspect being investigated is

- A. reflection of light
 - B. making a rainbow
 - C. refraction of light
 - D. how light travels.
48. Which one of the following is a reason why a glass container is likely to break if hot water is poured into it?
- A. Sudden expansion of the inner side of the glass wall.
 - B. Sudden expansion of air in the container.
 - C. Sudden contraction of the outer side of the glass wall.
 - D. The fact that the heated water had expanded.

49. On a see-saw a small boy can lift a big boy when
- A. the small boy stands on it
 - B. the big boy moves closer to the fulcrum
 - C. the two boys interchange positions
 - D. the two boys move equal distances away from the fulcrum.

50. The following are steps followed when investigating the force required to lift a load using a fixed pulley but not in their correct order:
- (i) Tie the load with a string
 - (ii) Pass the string with the load through the pulley on the support
 - (iii) Pull the spring balance and measure
 - (iv) Fix the pulley on the support
 - (v) Tie the spring balance at the end of string.

The **CORRECT** order of steps to be followed is

- A. (ii), (i), (iv), (v), (iii)
- B. (i), (ii), (iv), (v), (iii)
- C. (v), (i), (ii), (iv), (iii)
- D. (iv), (i), (ii), (v), (iii).