

KCPE 2005

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 chosen is written.

Example

In the Question Booklet.

4. Some curative drugs are also called
 - A. painkillers
 - B. vaccines
 - C. stimulants
 - D. antibiotics.

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 6 printed pages and 2 blank pages.

1. Which one of the following sources of energy is renewable?
- Kerosene.
 - Biogas from cowdung.
 - Coal.
 - Cooking gas from crude oil.

2. Which one of the following is the **MAIN** reason why the inside of a solar drier is painted black?
- To prevent rusting.
 - To make it last longer.
 - To make it absorb heat.
 - To decorate it.

3. The image formed in a pinhole camera is
- upright and smaller than the object
 - upside down and formed on the screen
 - upside down and same size as the object
 - upright and formed on the screen.

4. In a box guitar high sound can be produced without changing the tension of the strings by
- plucking the strings hard
 - increasing the lengths of the strings
 - using thinner strings
 - increasing the size of the box.

5. Below is an energy transformation:
Chemical → electrical → heat → light.

In which one of the following does the energy transformation shown take place when used to produce light?

- Geothermal.
- Car battery.
- Electric bulb.
- Bicycle dynamo.

6. Flowers **P**, **Q**, **R** and **S** have the following characteristics:

P: *Large and loosely held anthers*

Q: *Presence of nectar*

R: *Strong scent*

S: *Light pollen grains.*

Which two flowers are wind pollinated?

- P** and **S**.
- Q** and **R**.
- P** and **R**.
- Q** and **S**.

7. A fish is able to move **EASILY** in water because it
- has fins
 - has hard scales
 - is streamlined
 - has gills.

8. Which one of the following plants stores food in the stem?

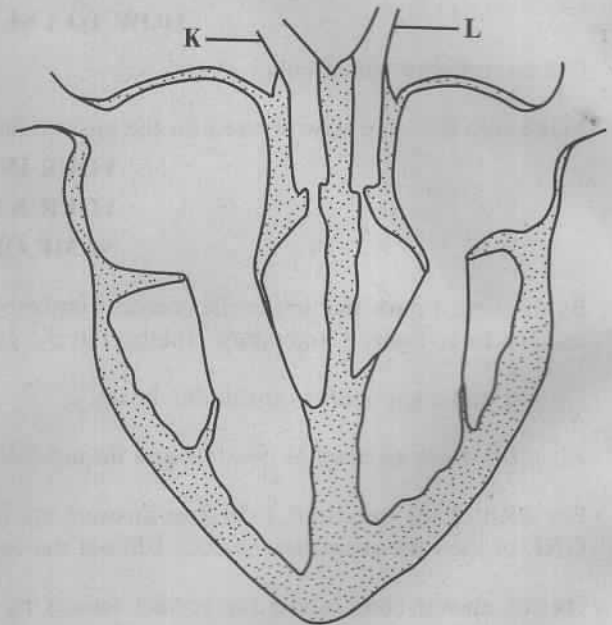
- Carrot.
- Irish potato.
- Sweet potato.
- Onion.

9. A food chain in a grassland is shown below.
Grass → Grasshoppers → Frogs → Snakes → Secretary birds.

Which one of the following would most likely happen immediately all snakes are killed?

- Frogs would decrease in number.
- Grasshoppers would increase in number.
- The amount of grass would increase.
- Secretary birds would decrease in number.

10. The diagram below represents a section of a heart of a mammal.



Which one of the following statements is **TRUE**?

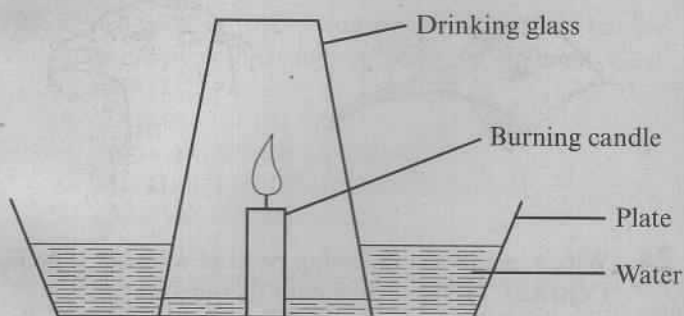
- K** carries blood into the heart whereas **L** takes it out.
- K** has a thin wall whereas **L** has a thick wall.
- K** carries deoxygenated blood whereas **L** carries oxygenated blood.
- K** has valves whereas **L** has no valves.

11. The following are the activities which are carried out when comparing strengths of acids in fruit juices.
- Counting the number of drops of each fruit juice required to change the colour.
 - Adding the different fruit juices drop by drop in each of the bottle tops.
 - Adding equal amounts of indicator in each of the bottle tops.
 - Putting equal amounts of wood ash solution into different bottle tops.

Which one of the following is the **CORRECT** order of the activities?

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

12. The diagram below represents a set up that can be used to demonstrate a certain property of air.



Which property of air is demonstrated by the set up?

- Air exerts pressure in all directions.
- Air occupies space.
- Part of air is used in burning.
- Air expands when heated.

13. Which one of the following will pollute water **ONLY**?

- Untreated sewage.
- Used oil.
- Farm chemicals.
- Factory wastes.

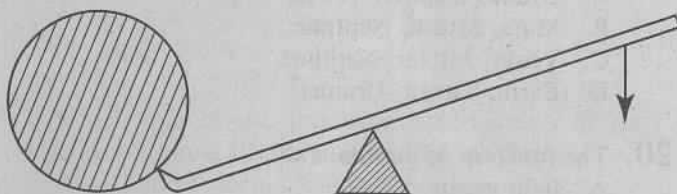
14. The **MAIN** reason why the government conserves wildlife is to have

- meat from wild animals
- plant and animal products
- a balance of nature
- animals for export.

15. When an object is thrown up in the air it falls because it

- is pulled by the earth
- exerts pressure
- is resisted by air
- is as heavy as air.

16. The diagram below represents a simple machine in use.



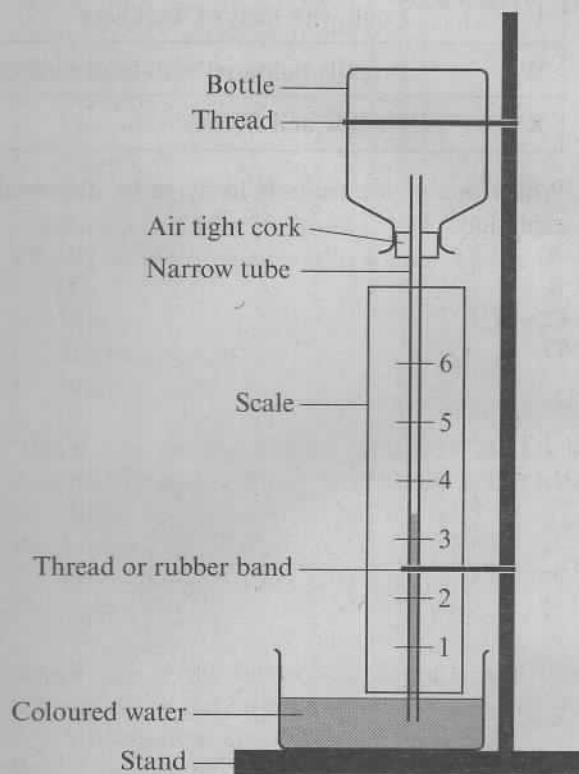
The machine is an example of

- an inclined plane
- a wheel and axle
- a lever
- a pulley

17. The reason for using rollers when moving heavy objects on a floor is to

- make objects lighter
- avoid damaging the floor
- increase speed of moving objects
- reduce force that opposes movement.

18. The diagram below represents a weather instrument constructed by a group of pupils who made a mistake while constructing it.



The mistake made during the construction was

- closing the mouth of the bottle
- using little amount of coloured water
- having the container with coloured water open
- having the scale reading from the bottom.

19. Which of the following planets are in the **second**, **fifth** and **eighth** positions respectively from the Sun?
- Uranus, Jupiter, Venus.
 - Mars, Saturn, Neptune.
 - Venus, Jupiter, Neptune.
 - Earth, Saturn, Uranus.

20. The function of plasma is to
- fight germs
 - combine with oxygen
 - help in clotting of blood
 - transport food.

21. Which pair of characteristics is common to lizard, toad, hawk and platypus?
- Lay eggs, breathe by lungs.
 - Body temperature varies, breathe by lungs.
 - Have scales, lay eggs.
 - Body temperature varies, have scales.

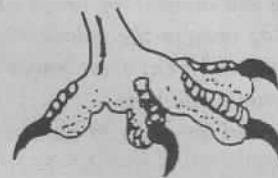
22. The table below shows characteristics of four different fruits U, V, W and X.

Fruit	Characteristics
U	Small and hairy
V	Long with lines of weakness
W	Brightly coloured with hard seed coat
X	Hollow and fibrous

Which one of the fruits is likely to be dispersed by exploding?

- U.
- V.
- W.
- X.

23. The diagram below represents a foot of a certain bird.



Which one of the following diagrams of beaks belongs to the same bird?



A



B



C



D

24. Which one of the following parts of a flower is **NOT CORRECTLY** matched with its function?

Part of a flower	Function
A. Stigma	produces pollen
B. Pollen grains	fertilize ovules
C. Style	supports stigma
D. Filament	supports anthers

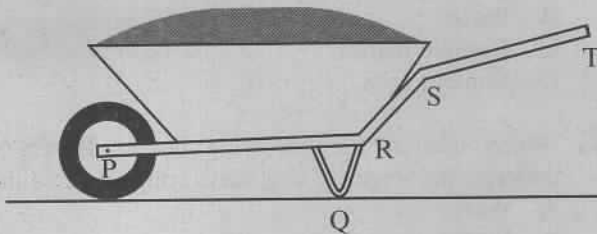
25. A glass containing ice cubes was placed in the open. After some time the outer surface of the glass became wet. This shows that
- air contains water vapour
 - ice melts to form water
 - air is a mixture of gases
 - air can be cooled.
26. Which one of the following is **NOT** required when finding the density of a regular solid?
- Spring balance.
 - Ruler.
 - Overflow can.
 - String.
27. Which one of the following statements about water is **TRUE**?
- Water mixes with all liquids
 - Water has definite size
 - Water has definite shape
 - Water is a good conductor of heat.

28. The **BEST** way of handling tin cans after using the contents is by
 A. burying them deep in the soil
 B. smelting and moulding them into other products
 C. throwing them in the pit latrine
 D. throwing them in the river.
29. Which one of the following pairs of levers has the position of load, fulcrum and effort as a forearm?
 A. Fishing rod and pliers.
 B. Spade and tongs.
 C. Bottle top opener and nutcracker.
 D. Scissors and claw hammer.
30. Which one of the following statements about a windsock is **TRUE**? A windsock
 A. measures speed of wind
 B. shows direction wind is blowing from
 C. shows strength of wind
 D. works the same way as a windvane.
31. Which one of the following **NEED NOT** be the same when comparing capillarity in different types of soil?
 A. Diameter of the tubes.
 B. Amount of each type of soil.
 C. Time allowed for the experiment.
 D. Amount of water used.
32. Which one of the following characteristics of sandy soil **DOES NOT** explain why water drains through it easily?
 A. Rough texture.
 B. Large particles.
 C. Large air spaces.
 D. Shiny particles.
33. Which one of the following drugs has similar effects to *miraa* (khat) when abused?
 A. Heroin.
 B. Tobacco.
 C. Mandrax.
 D. Excessive alcohol.
34. Which one of the following correctly shows the path taken by urine from the kidneys?
 A. Ureter → urethra → bladder.
 B. Urethra → ureter → bladder.
 C. Ureter → bladder → urethra.
 D. Urethra → bladder → ureter.
35. Which one of the following groups consists of only plants with fibrous roots?
 A. Cowpeas, maize, wheat.
 B. Rice, millet, maize.
 C. Carrot, millet, wheat.
 D. Cowpeas, rice, carrot.
36. The component of air used in making plant food is
 A. 0.03%
 B. 0.97%
 C. 21%
 D. 78%.
37. Which one of the following lists consists of only drugs of abuse that are prohibited in Kenya?
 A. Khat, tobacco, cocaine.
 B. Cocaine, heroin, mandrax.
 C. Bhang, beer, tobacco.
 D. Cobblers' glue, khat, beer.
38. Which two of the following processes involve loss of heat to the surroundings?
 A. Melting and freezing.
 B. Evaporation and condensation.
 C. Freezing and condensation.
 D. Melting and evaporation.
39. The leaf of a cactus plant
 A. reduces water loss
 B. makes plant food
 C. stores water
 D. allows gaseous exchange.
40. Which one of the following **DOES NOT** affect floating and sinking of an object?
 A. Size.
 B. Shape.
 C. Density.
 D. Weight.
41. Which one of the following soil components is **LEAST** affected when soil in a container is heated?
 A. Air.
 B. Water.
 C. Organic matter.
 D. Mineral salts.
42. Which one of the following insects **DOES NOT** undergo the stages of egg, larva, pupa and adult?
 A. Wasp.
 B. Locust.
 C. Bee.
 D. Moth.
43. Which one of the following substances will form a salt and water only when mixed with an acid?
 A. Ash solution.
 B. Chalk powder.
 C. Clover juice.
 D. Magadi soda.
44. Which one of the following pairs of substances will give the same colour when mixed with flower extract?
 A. Lemon juice and lime solution.
 B. Aspirin solution and actal solution.
 C. Lemon solution and aspirin solution.
 D. Lime solution and actal solution.

45. Sifting, picking and sieving are some methods of separating mixtures. Which one of the following mixtures can be separated by all the three methods?
- Maize and beans.
 - Sand and rice.
 - Maize flour and small pieces of iron.
 - Sugar and tiny pieces of glass.
46. Which one of the following is **NOT** a reason why drugs should be stored in their properly labelled container? To avoid
- contamination
 - getting expired
 - getting spoiled
 - wrong usage.
47. Which one of the following materials is magnetic?
- Aluminium plate.
 - Steel razor blade.
 - Silver coin.
 - Copper ring.
48. The following are steps followed by pupils when making a certain tool.
- Flattening one end of a nail.
 - Fixing the flattened end into a piece of wood.
 - Cutting off the head of the nail.
 - Flattening and sharpening the exposed nail.

The tool is a

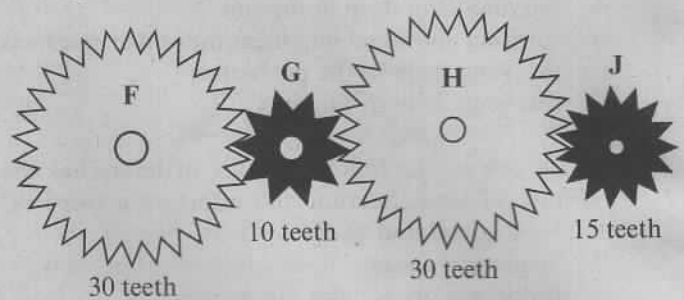
- hammer
 - chisel
 - drill
 - saw
49. The diagram below represents a loaded wheelbarrow.



The effort needed to push the wheelbarrow can be reduced by increasing the length of the part between

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

50. The diagram below represents an arrangement of gear wheels.



When wheel H is rotated once in a clockwise direction,

- wheel G rotates three times anticlockwise and J twice anticlockwise
- wheel G rotates three times anticlockwise and J twice clockwise
- wheel F rotates once clockwise and G three times clockwise
- wheel F rotates once anticlockwise and J twice anticlockwise.