

507

— SCIENCE —



Oct. 2019 – 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 only.
5. Confirm that the answer sheet that you have been provided with has the following:  
**YOUR INDEX NUMBER**  
**YOUR NAME**  
**NAME OF YOUR SCHOOL**
6. Do not make any marks outside the boxes.
7. Keep the sheet as clean as possible and do not fold it.
8. 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.
9. 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]

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

10. Your **dark line MUST** be within the box.
11. 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.





1. Which one of the following pairs of human body parts is used in breathing?

- A. Lungs and oesophagus.
- B. Nose and trachea.
- C. Diaphragm and stomach.
- D. Nose and oesophagus.

2. Which one of the following waste products is excreted by the lungs?

- A. Excess salts.
- B. Urine.
- C. Sweat.
- D. Excess water.

\*3. Which one of the following pairs of diseases **only** consists of sexually transmitted infections?

- A. Gonorrhoea and malaria.
- B. HIV/AIDS and measles.
- C. Syphilis and chancroid.
- D. Bilharzia and Gonorrhoea.

4. Which one of the following is the **third** stage of HIV/AIDS infections?

- A. Symptomatic.
- B. Window.
- C. Full blown.
- D. Incubation.

5. Which one of the following components of the environment is the **main** source of energy for living things?

- A. Plants.
- B. Air.
- C. Water.
- D. Soil.

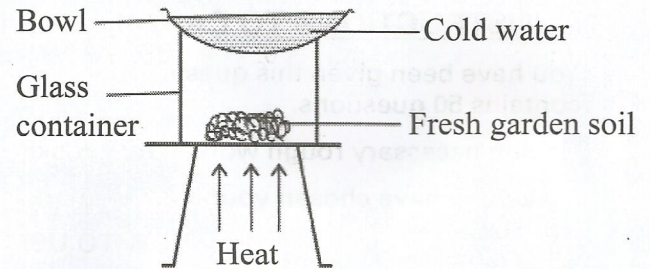
6. Which one of the following **least** pollutes the soil?

- A. Excess fertilisers.
- B. Oil spillage.
- C. Kitchen leftovers.
- D. Mining.

7. The soil that cracks easily when dry has

- A. a rough texture.
- B. small particles.
- C. large airspace.
- D. low capillarity.

8. The diagram below shows a set-up used to investigate a certain component of soil.



The component of soil that was investigated is

- A. living organisms.
- B. organic matter.
- C. air.
- D. water.

9. Which one of the following pairs of types of soil erosion forms V-shaped ditches?

- A. Gully and rill.
- B. Sheet and gully.
- C. Rill and splash.
- D. Splash and sheet.

\*10. Which one of the following nutritional deficiency diseases is **more** likely to be suffered by mothers of newly born babies?

- A. Kwashiorkor.
- B. Marasmus.
- C. Anaemia.
- D. Rickets.

11. Which one of the following foods is **more** rich in **both** proteins and fats?

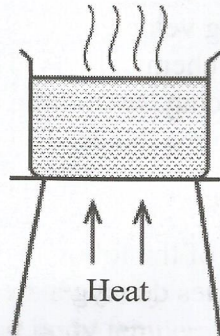
- A. Avocado.
- B. Milk.
- C. Sunflower.
- D. Beans.



12. The following produce special sounds, **except** sound from a

- A. hooting car.
- B. fire engine.
- C. ringing bell.
- D. moving tractor.

13. The diagram below shows a set-up that can be used to investigate heat transfer in a liquid. What should be added to the water for the pupils to observe heat transfer?



- A. Salt.
- B. Stones.
- C. Saw dust.
- D. Wax.

14. In which of the following devices is renewable energy used?

- A. Battery.
- B. Kerosene stove.
- C. Burning candle.
- D. Charcoal jiko.

15. The following activities were done when it was raining:

- (i) walking bare footed on the road
- (ii) lying on the bed
- (iii) playing football in the field
- (iv) driving a car on the road.

In which **two** activities is one **more** likely to be struck by lightning?

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

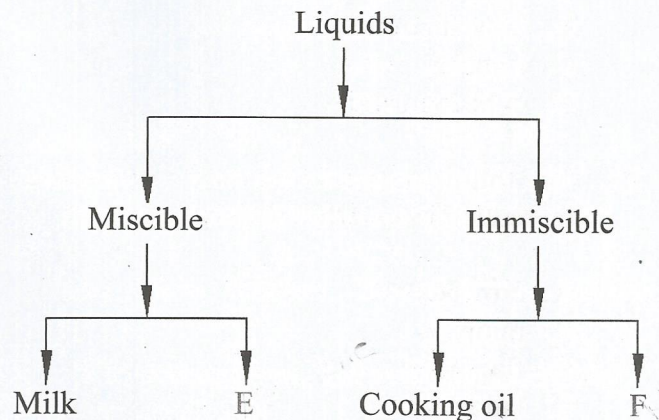
16. Which one of the following sources of electricity pollutes air?

- A. Dynamo.
- B. Geothermal generator.
- C. Biogas driven generator.
- D. Solar panel.

17. Which one of the following groups of materials consists **only** of materials that are magnetic?

- A. Bottle top, copper coin, aluminium foil.
- B. Razor blade, staple pins, steel wool.
- C. Spoon, copper wire, silver coin.
- D. Nail, aluminium foil, silver coin.

18. The chart below represents a simple classification of liquids



Which liquids are represented by E and F?

- |                |          |
|----------------|----------|
| E              | F        |
| A. Kerosene    | Water    |
| B. Water       | Milk     |
| C. Cooking oil | Milk     |
| D. Water       | Kerosene |

19. Which one of the following materials allows light to pass through but one **cannot** see through?

- A. Fluorescent tube.
- B. Smoke.
- C. Clean water.
- D. Mirror.



20. The percentage of the component of air that makes a bulb glow without burning is
- 78%
  - 21%
  - 0.03%
  - 0.97%
21. Which one of the following groups of substances has definite volume and shape?
- Oxygen, water and ice.
  - Ink, grease, glucose.
  - Flour, powdered chalk, salt.
  - Sand, powdered milk, methylated spirit.
22. Which one of the following machines works in the **same** way as a crowbar?
- Spade.
  - Claw hammer.
  - Ladder.
  - Wheel barrow.
23. The following machines make work easier by reducing the effort required **except**
- crowbar.
  - ramp.
  - flag post.
  - ladder.
24. Which one of the following statements is **true** about rain water?
- Uses more soap during washing.
  - Saves time and energy during washing.
  - Is rich in minerals.
  - Stains clothes.
25. A pupil who buys mango fruits from market and eats without washing is likely to be infected with
- typhoid and cholera
  - bilharzia and cholera
  - typhoid and malaria
  - bilharzia and malaria.
26. Which of the following practices conserves water by using it sparingly?
- Treating and using sewage water.
  - Harvesting rain water.
  - Using water used to wash vegetables to water plants.
  - Supplying water once a week.
27. Which of the following groups of activities **only** consists of industrial uses of water?
- Fishing, transport, mixing chemicals.
  - Washing vehicles, constructing roads, mixing chemicals.
  - Boat racing, swimming, fishing.
  - Cooling machines, drinking, cleaning of tools.
28. Which one of the following pairs of blood vessels carries deoxygenated blood?
- Venacava and aorta.
  - Pulmonary artery and pulmonary vein.
  - Venacava and pulmonary artery.
  - Pulmonary vein and aorta.
29. Which one of the following features is **least** important when describing a molar tooth?
- Roots.
  - Cusps.
  - Broadness.
  - Hardness.
30. Which one of the following components of blood is **correctly** matched to its function?
- | Blood component      | Function           |
|----------------------|--------------------|
| A. Plasma            | Transports oxygen. |
| B. White blood cells | Heat distribution. |
| C. Platelets         | Blood clotting.    |
| D. Red blood cell    | Transports iron.   |



31. The following are some effects of drug abuse:

- (i) drug induced accidents
- (ii) addiction
- (iii) coma
- (iv) rape
- (v) truancy
- (vi) impaired judgement.

Which **three** are classified as health effects?

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

32. The following are some characteristics of a certain vertebrate:

- (i) scales on the body
- (ii) varying body temperatures
- (iii) lay externally fertilised eggs

The animal with the above characteristics is likely to be

- A. salamander.
- B. shark.
- C. lizard.
- D. duck.

33. Which one of the following is the **main** effect of HIV/AIDS on the nation?

- A. Increased medical expenses.
- B. Poor health.
- C. Stigmatisation.
- D. Lack of parental care.

34. Which of the following statements is **true** about the immunisation schedule of infants?

- A. DPT vaccine is given at birth and the 6th week.
- B. BCG and polio vaccines are given at birth and the 6th week.
- C. DPT and measles vaccine are given at the 10th week.
- D. Polio and DPT vaccines are given at the 6th week.

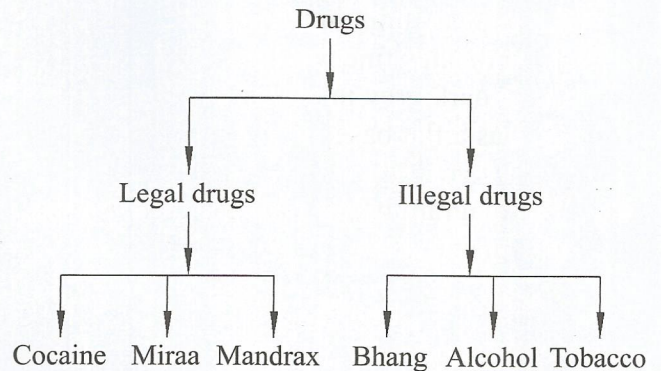
35. The **best** way of preventing the spread of HIV/AIDS among the youths in Kenya is

- A. seeking medication.
- B. being faithful to their partners.
- C. abstinence.
- D. testing and counselling.

36. Which one of the following plants is classified as **both** green and non flowering?

- A. Mosses.
- B. Sugarcane.
- C. Grass.
- D. Mushroom.

37. A pupil classified drugs as shown below.



Which drugs were **correctly** classified by the pupil?

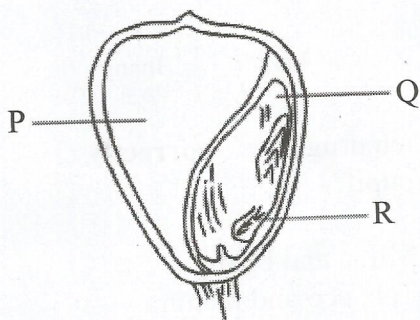
- A. Miraa and bhang.
- B. Tobacco and mandrax.
- C. Cocaine and miraa.
- D. Bhang and alcohol.

38. Which one of the following pairs of crop pests is likely to attack a crop of maize growing in the field?

- A. Weevils and aphids.
- B. Cutworms and rodents.
- C. Weaver birds and rodents.
- D. Weaver birds and cutworms.



39. A plant with deep and widespread root system is also likely to have
- many stomata.
  - flexible stems.
  - thick cuticles.
  - thin cuticles.
40. Which one of the following weeds **cannot** be effectively controlled by uprooting?
- Mexican marigold.
  - Oxalis.
  - Wondering jew.
  - Black jack.
41. The following are characteristics of a certain type of cloud **except**
- appears high in the sky.
  - indicates fine weather.
  - is dark grey in colour.
  - has a flat base.
42. The diagram below shows a cross section of a maize grain.



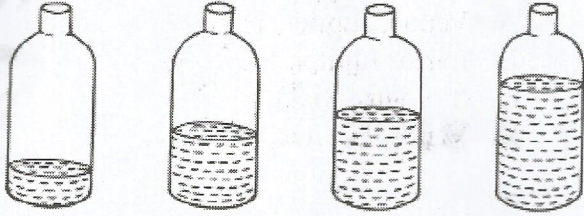
Which one of the following **correctly** identifies the parts labelled P, Q and R.

- | P            | Q         | R        |
|--------------|-----------|----------|
| A. Endosperm | cotyledon | radicle. |
| B. Endosperm | cotyledon | plumule. |
| C. Cotyledon | endosperm | plumule. |
| D. Cotyledon | endosperm | radicle. |

43. Which one of the following groups only consists of planets in the **3rd, 5th and 8th** position in the solar system?
- Venus, Jupiter, Uranus.
  - Earth, Jupiter, Neptune.
  - Mercury, Mars, Saturn.
  - Venus, Uranus, Jupiter.
44. Which one of the following is an adaptation for **both** flying and swimming?
- Strong hind legs.
  - Presence of wings.
  - Webbed feet.
  - Streamlined body.
45. The following are adaptations for feeding in herbivores. Which **two** are for turning food in the mouth?
- Presence of horny pad and continuously growing teeth.
  - Rough tongue and presence of diastema.
  - Presence of horny pad and rough tongue.
  - Continuously growing teeth and presence of diastema.
46. Which one of the following characteristics differentiates amphibians from reptiles?
- Cold blooded.
  - Body covered with scales.
  - Partly live in water.
  - Lay eggs.
47. Which one of the following does **not** conserve energy?
- Using a bicycle dynamo for lighting.
  - Using an improved jiko for cooling.
  - Using biogas for cooking.
  - Planting trees.



48. The diagram below shows a set-up prepared by a pupil to investigate an aspect of sound.



The aspect of sound investigated by the pupil is

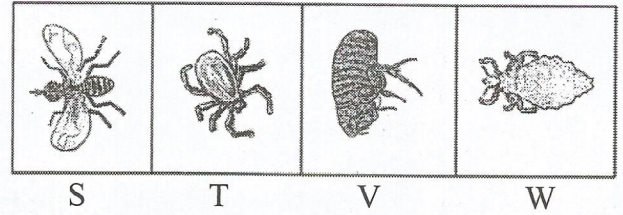
- A. production of sound by hitting.
  - B. sources of sound.
  - C. loud and soft sounds.
  - D. special sounds.
49. The diagram below shows a person riding a bicycle.



Which one of the following does **not** reduce friction during riding?

- A. Leaning forward on the ride.
- B. Treaded tyres.
- C. Ball bearings in the wheels.
- D. The shape of the wheels.

50. The diagram below shows some parasites labelled S, T, V and W.



Which one of the parasites is **more** likely to reduce the quality of wool in sheep?

- A. S
- B. T
- C. V
- D. W