

507

# SCIENCE



Mar. 2022 – 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

In the set of boxes numbered 4, draw a **dark line** inside the box with the letter D printed in it as indicated below.

[A]  [B]  [C]  [D]

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



This Question Paper consists of 8 printed pages.

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Turn over

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1. Food nutrients and oxygen are carried to the foetus by the
  - A. amniotic fluid
  - B. umbilical cord
  - C. uterine wall
  - D. placenta.

2. The diagram below represents a type of root system.



Which one of the following group of plants has this type of root system?

- A. Beans, maize, peas, cassava.
  - B. Cabbage, wheat, cassava, beans.
  - C. Millet, rice, peas, cabbage.
  - D. Millet, rice, maize, wheat.
3. Which one of the following parts of the human breathing system initiates the movement of air into the nose?
  - A. Trachea.
  - B. Lungs.
  - C. Diaphragm.
  - D. Bronchus.

4. Which of the following weather instrument is correctly matched to its use?

Weather instrument	Use
A. Windvane	Measures strength of wind.
B. Windsock	Shows direction of wind.
C. Thermometer	Measures amount of rainfall.
D. Rain gauge	Measures Temperature.

5. Which one of the following pairs of concentrates provide animals with energy?
  - A. Sunflower seeds and salt licks.
  - B. Wheat husks and bone meal.
  - C. Sunflower seeds and maize germ.
  - D. Maize germ and bone meal.

6. The following are possible food combinations:
  - (i) Rice, watermelon and spinach.
  - (ii) Chapati, kale and meat.
  - (iii) Chapati, beans and Irish potatoes.
  - (iv) Ugali, kale and fish.

The combinations that have a balanced diet are:

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

7. Which one of the following has the greatest effect on formation of gulleys on the farm?

- A. Type of soil.
- B. Soil cover.
- C. Organic matter.
- D. Sloppy land.

8. The following are ways of conserving water, except

- A. harvesting
- B. filtering
- C. recycling
- D. re-using.

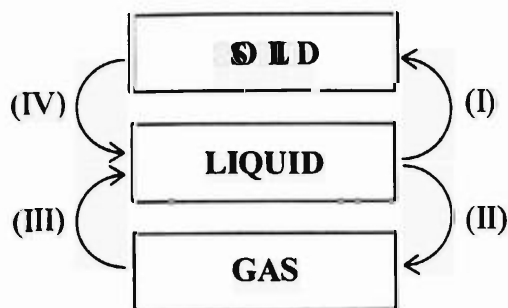
9. The following are sources of electricity except

- A. diesel engine
- B. bicycle dynamo
- C. car battery
- D. solar cells.

10. Which one of the following does **not** lead to pollution of the environment?

- A. Animals urinating in water ponds.
- B. Vehicles producing smoke.
- C. A plant rotting in the forest.
- D. Spraying pests with pesticides.

11. The diagram below shows change of state of matter with the processes involved marked I, II, III and IV.



The correct identity of the processes marked (I) to (IV) is

- (I)                      (II)                      (III)                      (IV)

- A. Freezing, evaporation, condensation, melting
- B. Evaporation, condensation, melting, freezing
- C. Condensation, melting, freezing, evaporation
- D. Melting condensation, freezing, evaporation

12. Which one of the following simple machines is the most suitable for lifting water from a well?

- A. Fixed pulley.
- B. Ladder.
- C. Cart.
- D. See-saw.

13. Which one of the following pairs of crops is **correctly** matched to its group?

Food crop	Cash crop
A. Tea	Cassava
B. Beans	Coffee
C. Sunflower	Pyrethrum
D. Cashew nuts	Sugarcane

14. Which one of the following pairs of mammals lays eggs?

- A. Whale and spiny ant-eater.
- B. Duck-billed platypus and whale.
- C. Spiny ant-eater and duck billed platypus.
- D. Duck-billed platypus and crocodile.

15. The following is as a result of **not** taking care of teeth, **except**

- A. formation of cavities
- B. bleeding gums
- C. bad breath
- D. shedding of teeth.

16. Which one of the following consists only of artificial sources of light?

- A. Sun, matches, torch.
- B. Sun, glow worm, candle.
- C. Glow worm, matches, kerosene lamp.
- D. Torch, candle, kerosene lamp.

17. Which one of the following methods of preserving food is suitable to grains?

- A. Use of honey.
- B. Salting.
- C. Drying in the sun.
- D. Freezing.

18. The following are ways in which water is used for recreation **except**

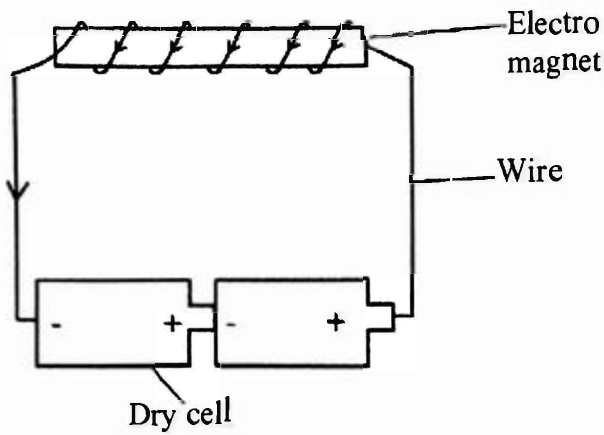
- A. swimming
- B. irrigation
- C. surfing
- D. sport fishing.

19. Which one of the following consists of matter that has a definite mass, **indefinite** shape and indefinite volume?

- A. Water vapour, air, smoke.
- B. Smoke, wood, ice.
- C. Water vapour, ice, toothpaste.
- D. Air, toothpaste, wood.



20. The diagram below represents a simple electric circuit.



The energy transformation that takes place in the circuit is

- A. chemical energy → heat energy → magnetic energy
- B. magnetic energy → electrical energy → chemical energy
- C. electric energy → chemical energy → heat energy
- D. chemical energy → electrical energy → magnetic energy.

21. Which one of the following statements is true about veins? They all

- A. carry blood under low pressure
- B. carry blood away from the heart
- C. carry oxygenated blood
- D. have thick walls.

22. A class seven pupil wanted to investigate a property of soil using the following materials:

- (i) Dry soil
- (ii) Water
- (iii) Glass jar

The property of soil being investigated was that soil has

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

23. A person had the following signs and symptoms:

- (i) Coughing
- (ii) Weight loss
- (iii) Chest pain
- (iv) Sweating at night
- (v) Spitting blood

Which one of the following diseases was he likely to be suffering from?

- A. Malaria.
- B. Tuberculosis.
- C. Typhoid.
- D. Cholera.

24. A plant was observed twined around the stem of another plant. This plant is dependent on the other for

- A. support
- B. habitat
- C. shade
- D. food.

25. The following are disadvantages of hard water except it

- A. forms scum with soap
- B. forms scales in boilers
- C. has important minerals
- D. causes stains on clothes.

26. Which one of the following diseases is a child immunised against at birth?

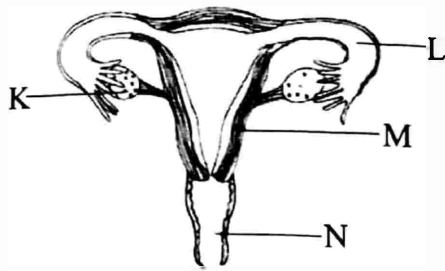
- A. Measles and diphtheria.
- B. BCG and tetanus.
- C. Polio and tuberculosis.
- D. Tuberculosis and measles.

27. A pupil observed that by placing the hands directly above a burning candle, the hands felt hot. The heat from the candle flame reached the hands by

- A. convection
- B. radiation and convection
- C. conduction
- D. conduction and radiation.



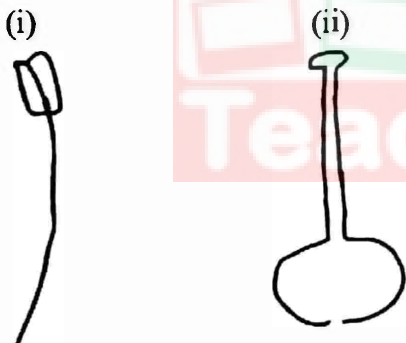
28. The diagram below represents the human female reproductive system with parts labelled K, L, M and N.



Which one of the following correctly represents K, L, M and N.

K	L	M	N
A. oviduct	ovary	uterus	vagina
B. ovary	uterus	oviduct	vagina
C. uterus	vagina	oviduct	ovary
D. ovary	oviduct	uterus	vagina

29. The diagram below represents detached parts of a flower.



Which one of the following correctly represents the parts labelled (i) and (ii)?

(i)	(ii)
A. Style	Stamen
B. Stamen	Pistil
C. Pistil	Filament
D. Filament	Style

30. The correct procedure of separating a mixture of sand and salt is

- dissolve in water – handpick – evaporate
- sieve – dissolve in water – evaporate
- dissolve in water – filter – evaporate
- handpick – dissolve in water – evaporate.

31. The following are statements made by pupils about HIV and AIDS during discussion:

- AIDS results from breaking taboos.
- AIDS may be transmitted by sex workers.
- AIDS is caused by HIV.
- Healthy looking people may be HIV infected.
- Sharing utensils may lead to HIV infection.

Which one of the following consist of correct statements?

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

32. Which one of the following actions reduces friction?

- Treading tyres of Vehicles.
- Putting new soles on shoes.
- Putting murrum on earth roads.
- Placing rollers under a moving object.

33. Which one of the following is an adaptation of plants which grow in soils that lack adequate nitrogen? They

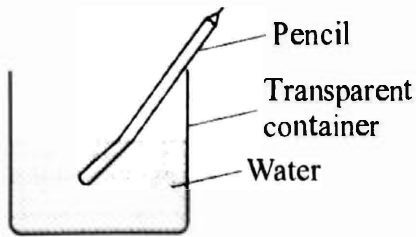
- have deep roots
- have root nodules
- feed on insects
- store food in stems.

34. Which one of the following components of the environment is found everywhere on earth?

- Air.
- Animals.
- Soil.
- Plants.



35. The diagram below represents an observation made when a pencil was put into water in a transparent container.



Which one of the following statements **correctly** explains the observation? Light

- A. bounces back on hitting a surface  
 B. is refracted as it moves from water to air  
 C. is dispersed in water  
 D. travels in a straight line in water.
36. The chart below shows weather changes on different days as recorded by class three pupils.

Records

Monday		
Tuesday		
Wednesday		
Thursday		

The best day for winnowing was on

- A. Monday  
 B. Tuesday  
 C. Wednesday  
 D. Friday.
37. Water sources can be contaminated directly by
- A. farm chemicals and aerosol sprays  
 B. exhaust fumes and farm chemicals  
 C. aerosol sprays and raw sewage  
 D. raw sewage and oil spillage.

38. Syphilis is in the same category of diseases as



- A. typhoid and cholera  
 B. cholera and chancroid  
 C. typhoid and gonorrhoea  
 D. chancroid and gonorrhoea.
39. The following practices are **not** safe when dealing with electricity **except**
- A. connecting many appliances to a socket  
 B. putting metallic objects in sockets  
 C. putting on switches with wet hands  
 D. ensuring that wires are insulated.
40. The diagram below represents a type of a human tooth.



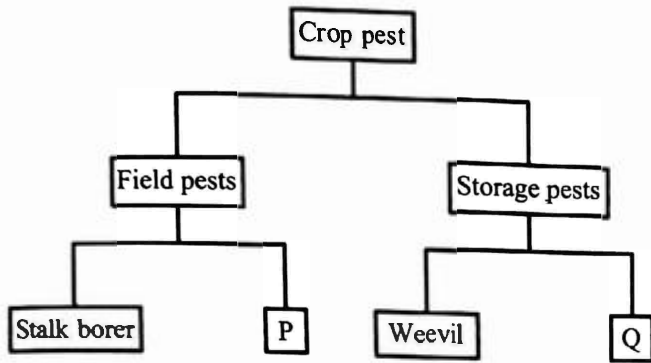
The function of the tooth is

- A. grinding  
 B. tearing  
 C. cutting  
 D. crushing.
41. The following are signs and symptoms of a certain nutritional deficiency disease:
- (i) Dizziness.  
 (ii) Body weakness.  
 (iii) Pale gums and finger nails.  
 (iv) Difficulty in breathing.

Which pair of foods can be used to prevent the disease?

- A. Ugali and liver.  
 B. Liver and spinach.  
 C. Ugali and beans.  
 D. Beans and cabbage.

42. The flow chart below shows a simplified classification of crop pests with examples represented by P and Q.



Which one of the following pairs of crop pest correctly represents P and Q?

- |   |   |
|---|---|
| <p><b>P</b></p> <p>A. Weaver bird.</p> <p>B. White ant.</p> <p>C. Aphid.</p> <p>D. Weaver bird.</p> | <p><b>Q</b></p> <p>Rat.</p> <p>Weaver bird.</p> <p>Cutworm.</p> <p>Aphid.</p> |
|---|---|
43. The following were used to investigate a factor that affects sinking and floating:

- (i) Water in a basin.
- (ii) Metallic bottle tops.
- (iii) A hammer.

The factor investigated was

- A. size of an object
  - B. type of a material
  - C. mass of a material
  - D. shape of an object.
44. The following are some common practices:

- (i) Washing hands after eating.
- (ii) Washing fruits before eating.
- (iii) Cleaning hands after visiting the toilet.
- (iv) Eating a balanced diet.

Which two practices will help control human intestinal worms?

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

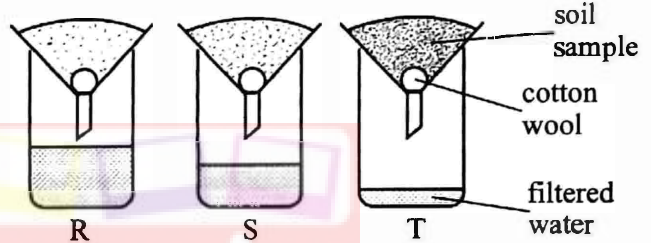
45. The **main** role of clay lining in an improved jiko is to

- A. control amount of charcoal used
- B. reduce heat loss
- C. reduce the buying of charcoal
- D. keep charcoal together.

46. Which one of the following practices will help control the spread of HIV from an infected mother to a baby at birth?

- A. Testing and counselling.
- B. Not sharing cutting instruments.
- C. Being faithful to one partner.
- D. Testing blood before transfusion.

47. The diagrams below represent a setup labelled R, S and T used to investigate drainage in soils collected from different places.

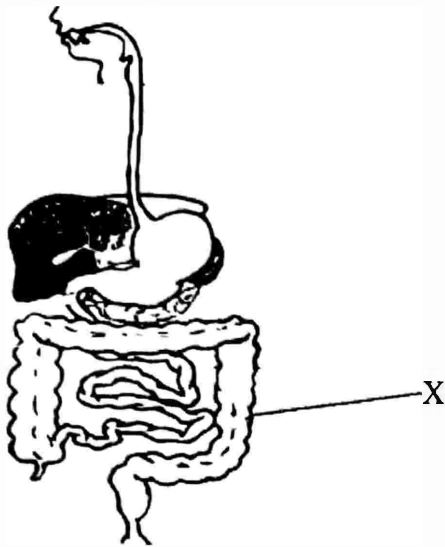


From the results of the investigations the soil that can be used to make ribbons is

- A. T and R
  - B. S only
  - C. T only
  - D. R and S.
48. The function of top soil in a compost manure heap is to
- A. introduce micro-organisms
  - B. introduce nutrients
  - C. add humus
  - D. increase air.



49. The diagram below represents the human digestive system with section labelled X.



The function of X is to

- A. absorb food nutrients
  - B. absorb water and mineral salts
  - C. store undigested food material
  - D. remove undigested food material.
50. A single fixed pulley makes work easier by
- A. changing the direction of the effort
  - B. reducing the effort used
  - C. changing the direction of the load
  - D. making the load distance large.

