

**SIGNAL EXAMS 2022**  
**NINTH K.C.P.E SIGNAL**  
**SCIENCE**

Time: 1hr 40min

**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 the 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 your answer 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. Medicines taken to cure known diseases are called  
A. vaccines  
B. supplements  
C. pain relievers  
D. antibiotics.

The correct answer is **D** (antibiotics)

**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 is 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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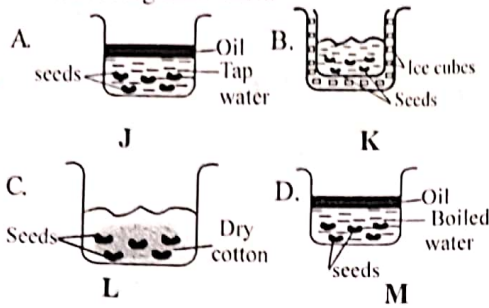


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1. The diagram below was set by class five pupils to investigate conditions necessary for seed germination.



In which set-up did germination fail due to lack of warmth and oxygen respectively?

- A. K and M  
 B. J and L  
 C. M and J  
 D. L and M
2. Which of the following planets are in third and fifth positions from the sun respectively?
- A. Jupiter and Earth  
 B. Earth and Jupiter  
 C. Venus and Saturn  
 D. Earth and Saturn.
3. Which of the following objects are correctly grouped to its characteristics?

Indefinite shape	Definite shape
A. Stone	Pen
B. Oxygen	Water
C. Soda	Wood
D. Water vapour	Candle wax.

4. Which of the following statements is **not** true about all arteries?
- A. They carry blood under high pressure.  
 B. They have thick elastic walls.  
 C. Some carry oxygenated blood.  
 D. Some carry blood away from the heart.

5. The following are control measures for HIV and AIDS **except**
- A. creating public awareness  
 B. vaccinating HIV and AIDS patients  
 C. voluntary counselling and testing  
 D. campaigning through various media.

6. The **main** function of the skin is to excrete
- A. carbon dioxide  
 B. sweat  
 C. urine  
 D. undigested food.

7. The following are sources of chemical energy **except**
- A. fruits  
 B. petrol  
 C. dry cells  
 D. bicycle dynamo.

8. Which of the following drugs is illegal in Kenya?
- A. Alcohol  
 B. Mandrax  
 C. Khat  
 D. Tobacco.

9. Which of the following groups of animals consists of omnivores only?
- Chimpanzees, elephants, pigs.
  - Apes, gorillas, hyena.
  - Dog, baboons, monkeys.
  - Human being, baboons, gorillas.

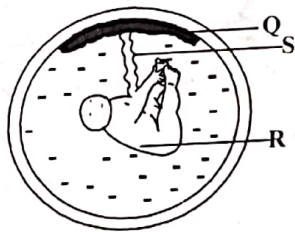
10. The following are some physical changes that takes place during adolescence.

- Hips broaden.
- Voice breaks.
- Increase in weight and height.
- Pimples appears on face.
- Wet dreams are experienced.

Which of the above changes takes place in both boys and girls?

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

11. The diagram below shows foetal development in a human being.



Which of the following statements is true about the part marked S? It

- moistens the foetus
- prevents foetal blood from mixing with that of the mother
- connects foetus to the placenta
- it produces hormones.

12. The diagram below represents a bird's beak.



The bird is likely to be a

- filter feeder
- grain eater
- nectar feeder
- flesh eater.

13. Which of the following pairs consists of harmful animals only?

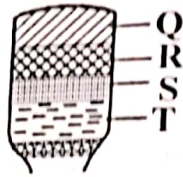
- Snake and frog.
- Dog and donkey.
- White ant and mosquito.
- Chameleon and earthworm.

14. Which of the following is a green non-flowering plant?

- Mushroom
- Yeast
- Mucor
- Mosses.

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15. Pupils in a certain school put soil in a transparent container and shook the mixture. They then waited it to settle as shown below.



Which of the layers Q, R, S, and T represents the humus?

- A. R
  - B. Q
  - C. S
  - D. T
16. The following are characteristics of a certain type of human teeth.

- (i) Have two roots.
- (ii) Have cusps at top.
- (iii) Have broad surface.

Which of the following statement is **true** about the type of teeth described above?

They are

- A. not shed
- B. the last to be shed
- C. used for cutting food
- D. twelve in number.

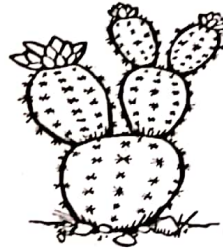
17. The following are characteristics of a certain weed.

- (i) Grows under a shade.
- (ii) Has petal-like leaves.
- (iii) Has pink flowers.

The weed described is

- A. thorn apple
  - B. oxalis
  - C. pigweed
  - D. Mexican marigold.
18. Which of the following groups of plants have fibrous type of roots only?
- A. Banana, coconut, rice.
  - B. Maize, blackjack, cactus.
  - C. Rice, beans, cassava.
  - D. Carrot, cabbage, maize.

19. Pupils came across the plant shown below during Science nature walk.



The plant is **likely** to have the same adaptation as

- A. rice
- B. algae
- C. sisal
- D. water lily.

20. Which of the following statements is **true** about the adaptation of carnivores?
- A. They have diastema for rolling food during chewing.
  - B. Their teeth are widely spaced to prevent meat from sticking between them.
  - C. Their teeth grow throughout their life.
  - D. They have carnassial teeth for grinding food.
21. Which of the following is **not** an amphibian?
- A. Toad
  - B. Salamander
  - C. Seal
  - D. Newt
22. Which of the following is a social effect of drug abuse?
- A. Addiction
  - B. Withdrawals
  - C. Impaired judgement
  - D. Rape
23. The following are sexually transmitted infections **except**
- A. gonorrhoea
  - B. bilharzia
  - C. chancroid
  - D. syphilis.

24. Excess medicine should be
- A. kept for later use
  - B. given to relatives
  - C. thrown into a pit latrine
  - D. given to neighbours.
25. The sock of windsock was pointing to the North. At what direction will the tail of windvane in the same area point?
- A. North
  - B. West
  - C. East
  - D. South.
26. Clouds are classified according to all the following **except**
- A. height
  - B. appearance
  - C. shape
  - D. size.
27. The following are soil pollutants **except**
- A. excess fertilisers
  - B. rotting animals
  - C. acid rainfall
  - D. plastic papers.
28. Which type of soil erosion is caused by wind and water?
- A. Rill erosion
  - B. Gully erosion
  - C. Sheet erosion
  - D. Splash erosion.

29. A pupil suffering from anaemia should be fed on
- A. fish
  - B. oranges
  - C. yams
  - D. liver.

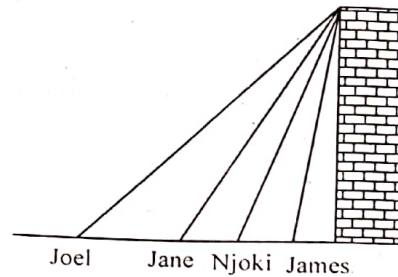
30. The **main** reason why expectant mothers are fed on diet rich in calcium is
- A. to replace blood lost during child birth
  - B. for strong bones of foetus
  - C. for formation of blood for foetus
  - D. for growth of the baby.

31. The following are causes of food poisoning **except**
- A. cooking soaked beans in a fresh water
  - B. eating sprouting part of irish potatoes
  - C. eating bluish maize
  - D. buying food from a dirty kiosk.

32. Which of the following nutrients is **correctly** matched with what it supplies in the body?
- A. Fats - Energy.
  - B. Carbohydrates - Repair worn out tissues.
  - C. Vitamins - Give chemicals.
  - D. Proteins - Protection against diseases.

33. Which of the following is a lever?
- A. Ladder
  - B. Claw hammer
  - C. Screw
  - D. Pulley.

34. Four people used a simple machine as shown below. to lift a 50kg bag of maize to the top.

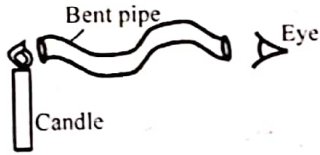


Who among them used the **least** effort?

- A. Joel
  - B. Njoki
  - C. James
  - D. Jane.
35. The hole of a beam balance should be
- A. too wide
  - B. wide enough
  - C. at one end
  - D. very narrow.

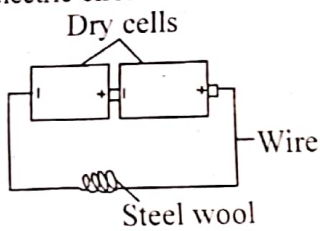
36. The following are uses of light **except**
- A. making plant food
  - B. communication
  - C. keeping off pests
  - D. warming a house.

37. The set up below was used by pupils to investigate a certain aspect of light.



The aspect investigated was

- A. light travels in a bent  
 B. refraction of light  
 C. light travels in a straight line  
 D. sources of light.
38. The following are sources of current electricity **except**
- A. dry cells  
 B. wind driven generators  
 C. dams  
 D. solar panel.
39. The diagram below represents a simple electric circuit.



What is the **correct** energy

transformation that took place?

- A. Chemical → electrical → heat  
 → Light  
 B. Chemical → electrical →  
 electromagnet  
 C. Chemical → electrical → light  
 → heat  
 D. Chemical → electrical → heat  
 → sound.

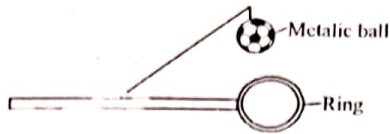
40. A bottle top floats on water and it sinks when crushed. This is due to difference in
- A. size  
 B. weight  
 C. material  
 D. shape.

41. The temperature at which a substance condenses is the same temperature it will
- A. evaporate  
 B. melt  
 C. freeze  
 D. cool.

42. The following are magnetic materials **except**
- A. staple pin  
 B. aluminium spoon  
 C. steel plate  
 D. iron hoe.

43. The following are way of using water sparingly **except**
- A. repairing leaking taps and pipes  
 B. not using showers when bathing  
 C. giving animals little water  
 D. using drip irrigation method

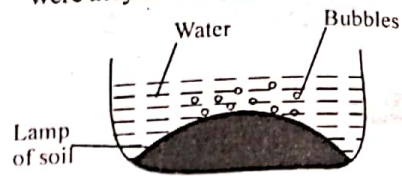
44. The activity shown below was carried out by class five pupils.



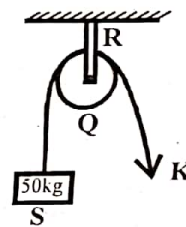
The pupils passed the metallic ball through the ring and it went through. They then heated the ball and noted that after heating, the ball could not pass through the ring again. The pupils then dipped the ball in cold water and it went through the ring again. What did the pupils conclude from the experiment?

- A. Rings expands on cooling.
  - B. Metallic ball expands on cooling.
  - C. Matter expands on heating and contracts on cooling.
  - D. Matter occupies space.
45. Which of the following statements is **true** about hard water? It
- A. is good for drinking
  - B. is good for laundry process
  - C. lathers easily with soap
  - D. does not clog pipes
46. The following are farm uses of water **except**
- A. irrigation
  - B. watering animals
  - C. mixing pesticides
  - D. making fountain.

47. The experiment below was carried out by class five pupils. What component of soil were they investigating?



- A. Humus
  - B. Moisture
  - C. Air
  - D. Living organisms
48. Inclined planes makes work easier by
- A. changing the direction of force
  - B. reducing the amount of work to be done
  - C. reducing the effort distance
  - D. increasing the effort distance.
49. The diagram below shows a single fixed pulley, spring balance should be placed at point



- A. Q
  - B. K
  - C. S
  - D. R
50. Which of the following statements about matter is **correct**?
- A. Liquids expand more than gases.
  - B. Solids have indefinite shape.
  - C. Solids do not change the state when cooled.
  - D. Gases have definite volume.

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