



# THE KENYA NATIONAL EXAMINATIONS COUNCIL

# KPSEA 2024

## INTEGRATED SCIENCE Oct. 2024 - 1 hour 40 minutes

604

### INSTRUCTIONS TO CANDIDATES (Please read these instructions carefully)

1. You have been given this question paper and a separate answer sheet. The question paper contains 50 questions. Answer **ALL** the questions.
2. Do any necessary rough work in this question paper.
3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question paper.

### HOW TO USE THE ANSWER SHEET

4. Keep the answer sheet clean and do not fold it.
5. Use an ordinary pencil.
6. Confirm that the answer sheet that you have been provided with has the following:



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**YOUR ASSESSMENT NUMBER**

**YOUR NAME**

**NAME OF YOUR SCHOOL**

**NAME OF SUBJECT**

7. For each of the questions 1 – 50, four choices are given. The choices are lettered A, B, C and D. In each case, only **ONE** of the four choices is correct. Choose the correct answer.
8. Do not make any marks outside the boxes. **Be sure of your answer before marking the box.**
9. On the answer sheet, indicate the correct answer by drawing a **dark line** inside the box in **which the letter you have chosen is written.**

#### Example

#### In the Question paper:

- 24.** A Grade 6 learner rolled a ball on the floor during a lesson on effects of force. Which one of the following effects of force was the learner demonstrating? Force can
- A. change the size of a body
  - B. stop a moving body
  - C. change the direction of a moving body
  - D. move an object

The correct answer is D.

#### On the answer sheet:

In the set of boxes numbered 24, draw a **dark line** inside the box with the letter D printed in it as indicated below.

**24.** [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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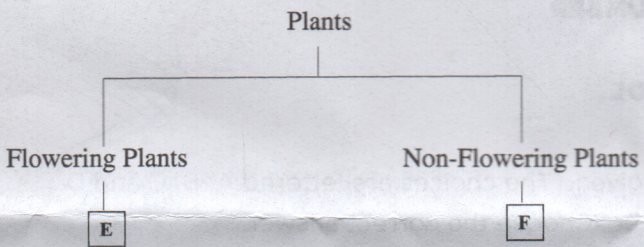
1. The following picture was taken by a learner during a study on characteristics of plants.



Plant before touch    Plant being touched    Plant after touch

The picture shows that plants

- A. grow
  - B. respond to environmental changes
  - C. reproduce
  - D. carry out a gaseous exchange to survive.
2. The following chart was drawn by a learner to show classification of plants.



Which of the following plants should the learner use to **correctly** represent E and F?

- |            |           |
|------------|-----------|
| <b>E</b>   | <b>F</b>  |
| A. Maize   | Onion     |
| B. Bean    | Moss      |
| C. Fern    | Sugarcane |
| D. Cypress | Napier    |

3. Learners listed the following as functions of the human skeleton:

- (i) protection of organs
- (ii) maintenance of body posture
- (iii) manufacture of red blood cells
- (iv) movement of the body

Which of the listed functions are for limb bones of the human skeleton?

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

4. During a class discussion on signs and symptoms of diseases of the human breathing system, learners identified the following:

- (i) coughing up blood
- (ii) blocked nostrils
- (iii) pain in the chest
- (iv) vomiting
- (v) difficulties in breathing

Which of the following consists **only** of signs and symptoms of tuberculosis?

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

5. During a lesson on classification of invertebrates, learners observed the characteristics of the invertebrate animal shown in the following picture.



Which of the following animals has the **same** characteristics as the animal in the picture?

- A. Butterfly.
- B. Millipede.
- C. Tick.
- D. Snail.

6. During a class discussion, learners listed some characteristics of vertebrates.

The following characteristics they listed apply to amphibians, **except**

- A. live on both land and water.
- B. have a moist skin.
- C. the body is covered by scales.
- D. body temperature controlled by the surrounding.



7. While at home, a learner found some fungi growing on bread that had been poorly stored. This type of fungi is a
- A. mould
  - B. mushroom
  - C. puffball
  - D. yeast.
8. Learners visited a certain factory and were each given ear muffs to put on. The purpose of the ear muffs was to
- A. protect them against loud sound.
  - B. avoid ear infections.
  - C. protect them against dust particles.
  - D. enable them hear properly.
9. During a class discussion, learners listed the following as causes of air pollution.
- (i) Smoke from burning farm waste
  - (ii) Smell from waste in a pit latrine
  - (iii) Waste from a construction site
  - (iv) Smell from kitchen waste
- Which one of the following pairs consists **only** of causes that can be controlled by changing waste into manure?
- A. (i) and (ii).
  - B. (ii) and (iii).
  - C. (iii) and (iv).
  - D. (i) and (iv).
10. During a class discussion, learners stated ways of conserving water at home. Which of the following ways stated by the learners conserves water by re-using?
- A. Harvesting rain water.
  - B. Boiling water for drinking.
  - C. Treating polluted water with chemicals.
  - D. Cleaning floor with laundry water.
11. Learners collected different types of waste paper in the school compound and used them to make footballs. This is managing solid waste by
- A. recycling and re-using.
  - B. recycling only.
  - C. reducing and re-using.
  - D. re-using only.

12. Grade 6 learners were asked to list various ways of managing solid waste.

Which of the following ways they listed involves recycling?

- A. Giving out old clothes to the needy.
- B. Feeding animals on potato peelings.
- C. Making toilet paper from old newspapers.
- D. Using old parts from a computer to repair other computers.

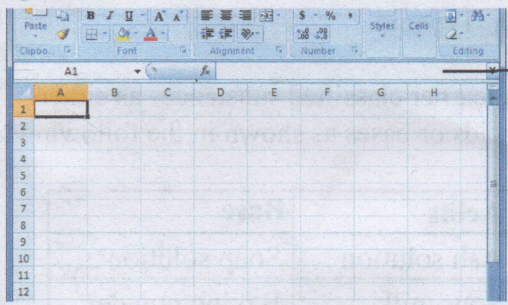
13. In creating a puzzle game, learners coded letters of the alphabet using numbers as shown.

a - 1	e - 5	i - 9
b - 2	f - 6	j - 01
c - 3	g - 7	k - 02
d - 4	h - 8	l - 03

Which one of the following codes represented the word 'clickfile'?

- A. 303903269035
- B. 303903026935
- C. 303930269035
- D. 303930269305

14. The following picture shows a spreadsheet window used by a learner to carry out simple operations.



Which one of the following operations can be carried out in the part labelled J?

- A. Type the formula in the spreadsheet.
- B. Type the name of the spreadsheet.
- C. Create the spreadsheet.
- D. Retrieve the spreadsheet.



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15. A patient complained of having pain in the lower abdomen and passing urine containing blood.

The patient was showing signs and symptoms of

- A. typhoid
- B. dysentery
- C. cholera
- D. bilharzia.

16. Grade 5 learners used the internet to search for health measures that prevent common communicable diseases. Some of the information they found included:

- (i) using a handkerchief always.
- (ii) proper use of latrines.
- (iii) washing hands after visiting the toilet.
- (iv) not sharing personal items.
- (v) observing personal hygiene.

Which one of the following common communicable diseases may **not** be prevented by observing all the above health measures?

- A. Ringworm.
- B. Coughs.
- C. Measles.
- D. Typhoid.

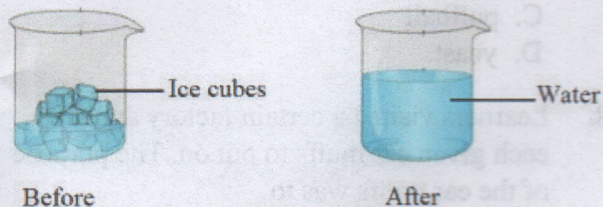
17. A learner classified substances as either acids or bases as shown in the following table.

Acids	Base
Ash solution	Soap solution
Sour milk	Baking powder

Which substance was **wrongly** classified?

- A. Soap solution.
- B. Sour milk.
- C. Baking powder.
- D. Ash solution.

18. Learners left ice cubes in the open for some time and observed that the ice cubes had changed as shown in the following picture.



Which one of the following is the process that caused the change?

- A. Evaporation.
- B. Freezing.
- C. Boiling.
- D. Melting.

19. A bell was rung for lunch and everyone in the school heard it. Which one of the following statements **best** explains why everyone heard the bell? Sound

- A. travels in all directions
- B. is reflected
- C. was loud enough
- D. travels fast in the afternoon.

20. A learner classified materials as either translucent or transparent as shown in the table.

Transparent	Translucent
Frosted glass	Car windscreen
Clear water	Air

Which material is **correctly** classified?

- A. Air.
- B. Clear water.
- C. Frosted glass.
- D. Car windscreen.

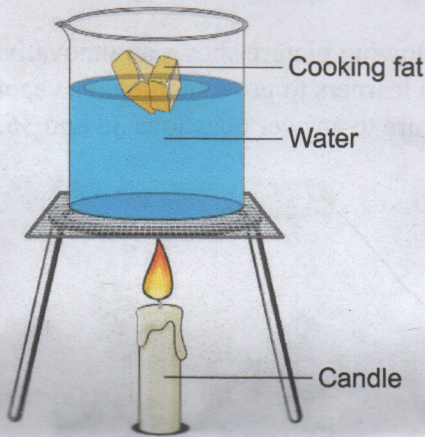


21. Learners carried out activities to demonstrate effects of force on objects.

Which of the activities shows that force can stop movement?

- A. Holding a ball in the hand.
- B. Squeezing a sponge.
- C. Turning a water tap.
- D. Breaking a stick.

22. The following picture represents a set-up used by learners to demonstrate transfer of heat. Learners observed that the cooking fat melted after sometime.



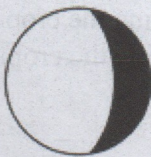
The heat was transferred to the cooking fat **mainly** by

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

23. During a class discussion on force of gravity, learners listed activities that oppose gravity. Which of the following activities they listed is **correct**?

- A. A fruit falling from a tree.
- B. Pouring water into a trough.
- C. A rock rolling downhill.
- D. Picking iron pins using magnet.

24. A learner observed a phase of the moon and drew it as shown.



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The phase of the moon drawn by the learner is

- A. waning gibbous
- B. waxing crescent
- C. waning crescent
- D. waxing gibbous.

25. The **best** weather condition for harvesting maize for grinding into flour is

- A. cold and calm
- B. cold and sunny
- C. calm and dry
- D. sunny and dry.

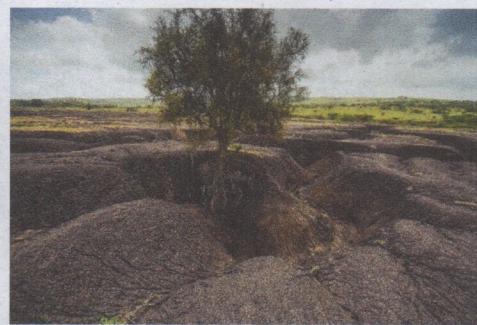
26. The following picture shows vegetables established on a special seedbed that conserves water.



The seedbed conserves water because it

- A. has compost manure
- B. is a deep seedbed
- C. has a polythene sheet lining
- D. is raised above the ground level.

The following picture shows land destroyed by soil erosion. Use it to answer questions 27 and 28.



27. Identify the type of soil erosion.

- A. Gully.
- B. Rill.
- C. Sheet.
- D. Splash.



28. The best way of improving the above land for crop production is to
- A. apply manure
  - B. construct gabions
  - C. mulch the land
  - D. plant cover crops.

A monkey was observed damaging a creeping fruit crop by feeding on mature fruits. Use this information to answer questions 29 to 31.

29. The fruit crop is **more** likely to be
- A. Pawpaw
  - B. Guava
  - C. Mango
  - D. Watermelon.
30. The crop can be protected from the monkey by
- A. poisoning the animal
  - B. trapping and killing the animal
  - C. use of dogs to attack and kill it
  - D. use of scare crows.
31. Which other creeping crop provides vitamins?
- A. Tree tomato.
  - B. Orange.
  - C. Avocado.
  - D. Strawberry.

The following pictures show cabbage at different stages of growth. Use them to answer questions 32 and 33.



32. Which picture shows the **correct** stage of harvesting?
- A. E
  - B. F
  - C. G
  - D. H

33. The cabbage is harvested by
- A. cutting the head
  - B. cutting the stem
  - C. uprooting the crop
  - D. plucking the leaves.
34. A Grade 4 learner classified black night shade, lettuce, spider weed, cabbage, kales and coriander into the same group. Which one of the following features did the learner use to classify the vegetables?
- A. Leaves.
  - B. Flowers.
  - C. Fruits.
  - D. Pods.

The following picture shows an innovative garden used by learners to grow indigenous vegetables. Use the picture to answer questions 35 and 36.



35. The **main** reason for growing vegetables using this type of garden is to
- A. conserve moisture
  - B. reuse containers
  - C. use limited space
  - D. control crop diseases.
36. The **best** way learners can improve the growth rate of their vegetables is by
- A. applying manure on the garden
  - B. spraying chemicals to kill weeds
  - C. mulching the crop to cover weeds
  - D. irrigating the crop.



37. Learners are preparing to transplant their vegetable seedlings. Which one of the following garden tools will they require?
- Fork jembe.
  - Trowel.
  - Panga.
  - Spade.
38. Crops require suitable seedbeds for planting. Which one of the following crops requires a fine seedbed?
- Beans.
  - Maize.
  - Millet.
  - Pumpkin.
39. Teacher Juliani asked his learners to write how different methods of cooking are carried out. Which one of the following statements they wrote is **true** about baking?
- Food is cooked using dry heat.
  - Cooking food immersed in water at high temperatures.
  - Melted fat from the foods is used to cook the same food.
  - Cooking food while immersed in oil.
40. Jim always gets tired quickly whenever he is playing football with his friends. Which of the following **groups** of food should he increase in his diet?
- Carbohydrates.
  - Proteins.
  - Minerals.
  - Vitamins.
41. Puma, Suma, Lama and Rama prepared lunch for their families. Who among them prepared a **healthy** meal?
- Puma** - rice, chapati, potato stew and juice.
  - Suma** - ugali, beef stew, steamed spinach and mangoes.
  - Lama** - cake, mandazi, fried eggs and soda.
  - Rama** - fried chips, deep fried chicken, sausage and soda.
42. Emily wants to stew meat for her family. Which of the following is one of the **correct** steps she will follow.
- Ensure water covers the meat being stewed.
  - Stir the meat well and serve when cold.
  - Add salt to taste when serving the meat.
  - Reduce heat and allow the meat to cook.
43. Grade 6 learners were searching on the internet for the reasons for preserving vegetables. Which of the following is one of the **correct** reasons they found?
- To make them easy to cook.
  - To ensure they are hygienic before use.
  - To be available at a cheap price.
  - To be available when out of season.
44. Grade 6 learners normally carry out the following activities when cleaning their classroom.
- dust windows, chairs, tables and desks
  - sweep the class, dispose of waste in a dust bin and take it to the rubbish pit
  - arrange the furniture after cleaning
  - mop the class and allow to dry
  - clean and store the cleaning materials and tools properly
- Which of the following shows the **correct order** of activities?
- (i), (ii), (iii), (iv), (v).
  - (ii), (iv), (i), (iii), (v).
  - (i), (ii), (iv), (iii), (v).
  - (ii), (i), (iv), (iii), (v).



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45. Peter was asked to write how his family conserves cooking gas at home. One of the **correct** ways he wrote is
- light the match stick before turning on the gas
  - cut foods in large chunks before cooking
  - avoiding touching gas cylinders with wet hands
  - refill gas cylinder occasionally.
46. Sela's house has an earthen floor. She wants to sweep it. Which one of the following is the reason why Sela should close all the windows and doors before sweeping?
- To keep off dirt when sweeping the house.
  - To make her sweep the whole house faster.
  - To prevent dirt from being blown about by the wind.
  - To avoid interference from the other family members.
47. Mkubwa always wears clean school uniform. Which one of the following is a reason for wearing clean uniform?
- To feel good about himself.
  - To do all his class work well.
  - To make his classmates happy.
  - To be liked by others.
48. Grade 6 learners were talking about the process of soaking in laundry work. Which of the following **correctly** describes what they said about soaking? Soaking is done in
- clean warm water for some time before washing
  - clean cold water for some time before washing
  - warm soapy water for some time before washing
  - cold soapy water for some time before washing.
49. Jenny wants to make a scarf for her grandson. Which of the following **stitches** would you advise her to use?
- Stem stitch.
  - Chain stitch.
  - Single crotchet.
  - Satin stitch.
50. The head teacher of Bidii primary school advised the learners to always repair their uniform when torn. Why is this important?
- For the uniform not to have creases.
  - For the uniform to look neat.
  - For the uniform to fit well.
  - For the uniform to be clean.