SIGNAL Publishers

GRADE 7 - 2025

THE SCHOLAR
007

SIGNAL CBE ASSESSMENT SEVENTH TRIAL

JUNIOR SCHOOL ASSESSMENT

— INTEGRATED SCIENCE —

TIME: 1 hr 30 min

Learner's Name:
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Grade:
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School Name:
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Assessment No:
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Instructions for Learners:

1. Write down your name, name of your school and assessment number in the spaces provided.
2. This paper consists of 30 questions.
3. Ensure you check the question paper to ascertain that all the pages are printed and that no questions are missing.
4. Answer all the questions in the spaces provided.
5. Be sure to sign the **honour pledge** below at the end of this assessment.

Honour pledge: "I swear on my honour that I have not violated the honour code before or during this assessment".

Signature or Initial: Date:

ASSESSMENT RUBRICS

Learning area	Performance	Exceeds Expectations (4)	Meets Expectations (3)	Approaching Expectations (2)	Below Expectations (1)
Integrated Science					

SECTION A (20 marks)

1. Amina was reading a magazine and saw a photograph showing a group of scientists observing chimpanzees in a forest. Which component of Integrated Science was Amina most likely reading about?
   A. Biology B. Physics
   C. Chemistry D. Astronomy
2. Mutanu came across the following chemical bottle in a science laboratory while carrying out an experiment.

Which health hazard does the symbol shown in the chemical bottle represent?
   A. Corrosive B. Biological hazard
   C. Flammable D. Toxic
3. While carrying out separation of mixtures in the Science laboratory, Victoria accidently mixed kerosene and water. Which of the following laboratory apparatus would you advise her to use in order to separate the two mixtures?
   A. Dropping funnel B. Pipette
   C. Volumetric flask D. Separating funnel
4. A Grade 7 learner experienced heartburn after eating spicy food. To relieve the discomfort, the learner decided to take an antacid tablet. What role did the antacid tablet play in this situation?
   A. It increases the acidity in the stomach.
   B. It neutralised the excess acid in the stomach.
   C. It produces more enzymes for digestion.
   D. It converts acid into water and salt only.

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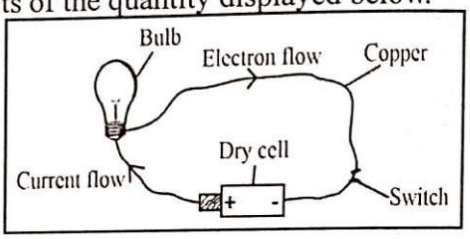
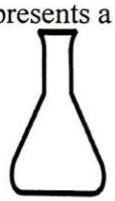
5. A farmer tested the pH of his garden soil using blue litmus paper on a soil-water mixture. The paper remained blue. What did he conclude about the soil? It is
   A. strongly acidic B. weakly acidic
   C. neutral D. basic
6. The knowledge of fractional distillation is applied in everyday life in many sectors. The following are some of the applications of fractional distillation except
   A. extraction of sugar from sugarcane
   B. manufacture of spirits
   C. separation of components of crude oil
   D. manufacture of oxygen and nitrogen from air.
7. When a microscope is not well stored it gathers dust. Which of the following is the best place to store the light microscope?
   A. Inside a closed cupboard
   B. In a staffroom
   C. Under the table
   D. In a closed polythene bag
8. During a science experiment, Maria accidentally touched a hot tripod stand and got a burn on her finger. Which one of the following is the most appropriate first aid step she should take immediately?
   A. Rub the burn with oil.
   B. Cover it with a dirty cloth.
   C. Put the finger under cold running water.
   D. Burst any blisters that form.
9. A learner in the laboratory accidentally inhaled chemical fumes and began coughing and feeling dizzy. What is the most appropriate action to take immediately?
   A. Give the student water to drink.
   B. Move the student to an open, well-ventilated area.
   C. Make the student sit down and rest inside the lab.
   D. Spray air freshener to remove the chemical smell.
10. Which one of the following hazard symbols are you likely to see on a container containing insecticides that are poisonous if swallowed or inhaled?
   A. Skull and crossbones.
   B. Corrosive hand symbol.
   C. Biohazard symbol.
   D. Flame over circle.
11. During an Integrated Science practical lesson, a learner was tasked by the teacher to mix two chemicals safely while minimising the risk of spilling. Which of the following apparatus would you advise the learner to use?
   A. Beaker B. Watch glass
   C. Conical flask D. Evaporating dish
12. A microscope has an eyepiece of ×10 and a revolving nosepiece with three objective lenses: ×4, ×10, and ×40. What is the highest total magnification this microscope can achieve?
   A. ×40 B. ×100
   C. ×50 D. ×400
13. Grade 7 earners placed black ink on filter paper in water and observed different colours moving up. Which separation method did they likely use?
   A. Chromatography B. Fractional distillation
   C. Filtration D. Decantation
14. Grade 7 learners were asked to mention the SI units of the quantity displayed below.

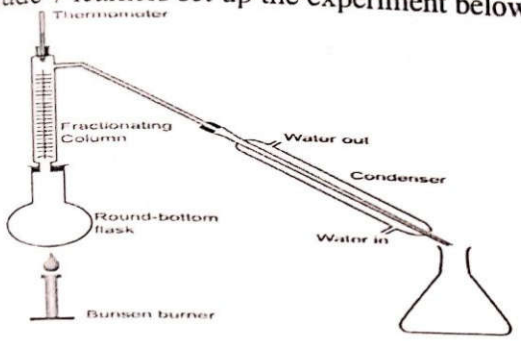


   Which of the following SI units did the learners mention?
   A. Grams B. Candela
   C. Mole D. Amperes
15. Which of the following laboratory apparatus represents a beaker?

   A. 
   B. 
   C. 
   D. 

16. Which of the following parts of a microscope controls the amount of light reaching the specimen?
   A. Mirror B. Eyepiece
   C. Diaphragm D. Objective lens
17. A block of wood measures 4.5 cm by 5.5 cm by 6.5 cm. If the block of wood weighs 425 g, determine its density.
   A. 160.875 g/cm³ B. 585.875 g/cm³
   C. 2.642 g/cm³ D. 25.76 g/cm³
18. Which one of the following practices is not helpful in preventing kidney disorders?
   A. Drinking clean water.
   B. Regular exercise.
   C. Avoiding unnecessary medication.
   D. Excessive intake of processed salty foods.

19. Grade 7 learners set up the experiment below.



Which of the following substances did they likely separate using the setup above?

A. Crude oil B. Sugar
C. Flower extracts D. Distilled water

20. In a laboratory, a learner measured 2 litres of water for an experiment. Which one of the following is the correct SI derived unit for volume that should be used in scientific reporting?
A. Litre (L)
B. Cubic metre (m^3)
C. Millilitre (mL)
D. Cubic centimetre (cm^3)

Section B (30 marks)

21. Why is it important for students to understand hazard symbols before handling substances in the laboratory? (2 marks)

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22. During an Integrated Science lesson, a group of learners were seen using a thermometer to measure the temperature of boiling.

(a) State two science skills the learner was applying. (2 marks)

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(b) Why are those skills important in daily life? (1 mark)

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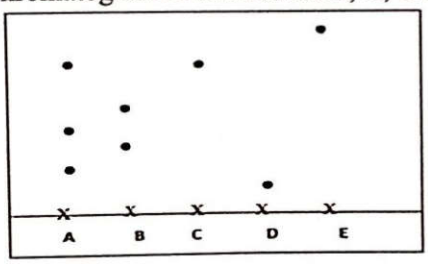
23. The diagram below shows a paper chromatogram of substances A, B, C and D which are coloured.



(a) Indicate the solvent front on the chromatogram. (1 mark)

(b) Which substance is pure? ..... (1 mark)

(c) Substance E is a mixture of C and D. Indicate its chromatogram in the diagram. (1 mark)

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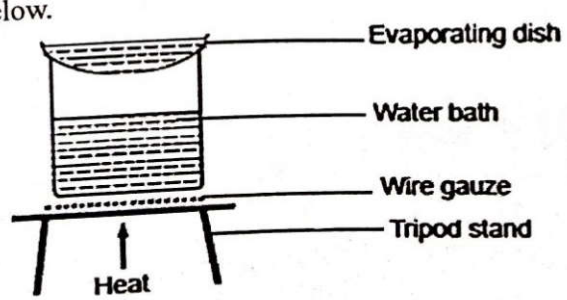
24. A Grade 7 learner put 10 cm3 of concentered copper (II) sulphate solution into an evaporating dish then set up the experiment below.



As heating continued, he dipped a glass rod into the solution regularly then allowed it to cool in the air.

(a) Why was the glass rod dipped in the solution as the heating continued? (1 mark)

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(b) What observation was made when the solution cooled. (1 mark)

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(c) Identify the method of separation used in the experiment. (1 mark)

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(d) State two applications of the method of separation shown above. (2 marks)

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25. An oil refinery needs to separate different hydrocarbon fractions from crude oil based on boiling points.

(a) Which technique would be the most suitable in separating the above mixtures? (1 mark)

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(b) Briefly explain how the technique mentioned in (a) above works. (3 marks)

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26. A manufacturer produces cleaning agents that are either acidic or alkaline to remove different types of stains. A worker accidentally spills a strong acid-based cleaner on their hand.

(a) What are some common acids and bases used in household cleaning products? (2 marks)

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(b) How should the worker respond to acid contact with skin? (2 marks)

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27. A Grade 7 learner accidentally spilled some staining solution on the microscope's stage during a practical session. How should the student clean and care for the microscope after the spill? (3 marks)

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28. What is the difference between acids and bases based on the PH scale? (1 mark)

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29. What is the color change observed when a plant extract is added to an acidic solution? (1 mark)

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30. The table below shows the PH of substances P, Q, R and S.

Substance	P	Q	R	S	T
PH	2	6	7	9	11

Identify the substances that is likely to be

(a) Sodium hydroxide ..... (1 mark)

(b) Lemon juice ..... (1 mark)

(c) Pure water ..... (1 mark)

(d) Sulphuric acid ..... (1 mark)