



DISTINCTION KJSEA ASSESSMENT TEST JUNIOR SCHOOL

GRADE NINE - 2025

INTEGRATED SCIENCE PAPER 1

9

PREMIER

1 Hr 30 Min

Instructions to the learner

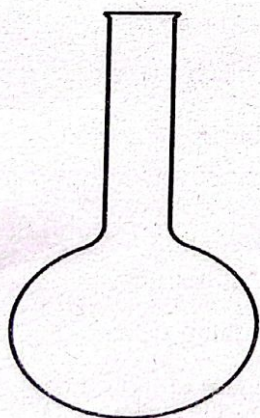
- This paper has two sections totaling 70 marks.
- Read instructions in each part and answer the questions appropriately.

SECTION A: 30 MARKS

1. The kidney is a very important part of the excretory system, its main function is to filter blood and remove waste materials. Urine is the main waste material excreted by the kidney. Which one of the following is not a component of urine?

- | | |
|-----------|-----------------|
| A. Urea | B. Salts |
| C. Sweats | D. Excess water |

2. While cleaning the laboratory, a Grade 7 learner came across the apparatus below. What is the name of the apparatus the learner saw?



- Delivery tube
- Conical flask.
- Beaker
- Round bottomed flask.

Every element has its own unique symbol which is used for identification. Identify the element which has been **correctly** matched with its symbol.

- | | |
|---------------|------------------|
| A. Sodium -Na | B. Sulphur -Si |
| C. Silicon -S | D. Potassium -Po |

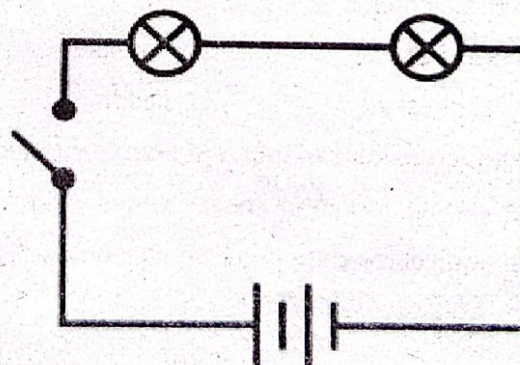
4. Study the table below and identify the physical changes in adolescents that has been **correctly** matched with the gender.

	Changes in adolescents	Occurs in
A.	Hips broadening	Boys.
B.	Voice becomes softer	Girls
C.	Menstruations begin	Boys.
D.	Experiences wet dreams	Girls.

5. As one prepares to observe a specimen using a microscope, it is important to first prepare the specimen. What is the importance of staining the specimen?

- To make the specimen more beautiful.
- To increase turgidity.
- To prevent distorting cells.
- To increase visibility.

6. During a practical lesson, a Grade 8 learner used the simple circuit below to test the conductivity of a metal. Identify the type of bulb arrangement in the circuit she used?



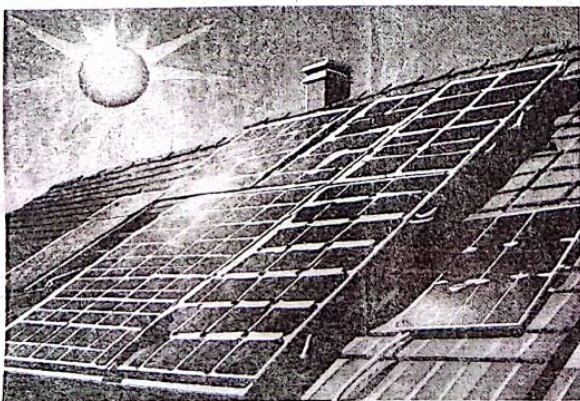
Circuit A

- Parallel arrangement of cells.
- Series arrangement of bulbs
- Series arrangement of cells.
- Parallel arrangement of bulbs.

7. When walking around the school, a Grade 8 learner came across the symbol below on a fire extinguisher. Which class of fire is the extinguisher used for?



- A. Class A
C. Class B
B. Class D
D. Class C
8. When learning about components of Integrated Science. Peter listed down the components of Integrated Science. Which one of the following is not expected to be in the list?
- A. Agriculture.
C. Physics.
B. Biology
D. Chemistry.
9. Energy transformation may lead to dangers. Identify the danger that may cause loss of hearing and can be mitigated by use of earmuffs?
- A. Bright light.
C. Road accidents
B. Collisions.
D. Loud noise.
10. An atom of an element has an electron arrangement of 2.8.2. What is the name given to the element?
- A. Barium.
C. Magnesium
B. Aluminum.
D. Silicon.
11. The picture below shows a source of electricity commonly found in most homes. What is the name given to the power source below?



- A. Wind power
C. Hydroelectric power
B. Solar power
D. Geothermal power.

12. Study the table shown below and use it to identify which separation method has been **correctly** matched with the type of mixture it separates

	Method of separation	Type of mixture
A.	Fractional distillation	Water and salt
B.	Paper chromatography	Dye from coloured flowers
C.	Filtration	Oil and water
D.	Use of a magnet.	Maize and wheat flour.

13. Carbon is an element found in the periodic table. It has 6 protons and 6 electrons. What is the mass number of carbon?
- A. 0
C. 12
B. 36
D. 1
14. Rael, a Grade 8 learner, wrote down the arrangements of the components of a fire triangle. Which one is the **correct** arrangements?
- A. Hydrogen, fire and light
B. Oxygen, fuel and carbon IV oxide.
C. Oxygen, hydrogen and heat
D. Oxygen, fuel and heat
15. After use, a microscope has to be covered before being stored in an appropriate place. What is the significance of covering a microscope?
- A. To prevent it from getting dust.
B. To prevent moisture.
C. To avoid falling down
D. To keep it away from pests and rodents.
16. Measurements in science are standardized for them to be useful. We have basic and derived quantities. Which one of the following is not an example of a derived quantity?
- A. Area
C. Temperature
B. Density
D. Pressure.
17. Which part of the female reproductive system is responsible for nourishing and developing foetus?
- A. Uterus.
C. Vagina
B. Fallopian tube
D. Ovaries.

18. The cell membrane is responsible for selectively allowing substances in and out of the cell. Which one of the following is **not** a property of the membrane?

- A. It is semi permeable.
- B. It is sensitive to the changes in pH and temperature.
- C. It is polarised.
- D. It is affected by surface area to volume ratio.

19. Electric motors and generators have magnets that help in their functioning. Apart from the two, identify another electronic device that uses magnets for their functioning

- A. Washing machines. B. Iron sheets
- C. Electrical cables D. Bulbs.

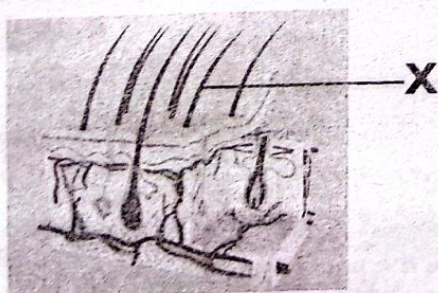
20. Osmosis is very important in living organisms. Which one of the following is not an importance of osmosis to plants?

- A. Support in plants
- B. Opening and closing of the stomata.
- C. Osmoregulation.
- D. Feeding of insectivorous plants

21. Grade 8 learners were asked to name situations which demonstrate high pressure. Each one of them gave their answers. Who among the learners gave the **correct** answer?

	Learner	Answer.
A.	Pauline	A wide flat tire.
B.	John	A sharp knife cutting through paper
C.	Jane	A wide paddle boat moving in water
D.	Kelvin	A snow shoe in soft snow

22. Study the diagram below and identify the part marked **X**.



- A. Hair follicle B. Sweat duct
- C. Blood vessels D. Hair

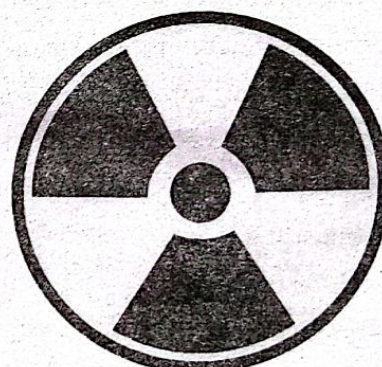
23. A television undergoes energy transformation in order to display pictures and produce sound. Identify the correct energy transformation taking place in a television that uses a battery.

- A. Potential energy -kinetic energy.
- B. Chemical energy-kinetic energy-electrical energy.
- C. Chemical energy –electrical energy-light and sound energy.
- D. Potential energy –kinetic –sound energy.

24. A Grade 7 learner was asked to identify the part of the male reproductive system where sperms are produced. What was his answer?

- A. Prostate gland B. Testes
- C. Urethra D. Epididymis

25. During a visit to the laboratory. A learner came across the symbol below. What is the meaning of the symbol the learner saw?



- A. Corrosive. B. Radioactive
- C. Flammable D. Carcinogenic.

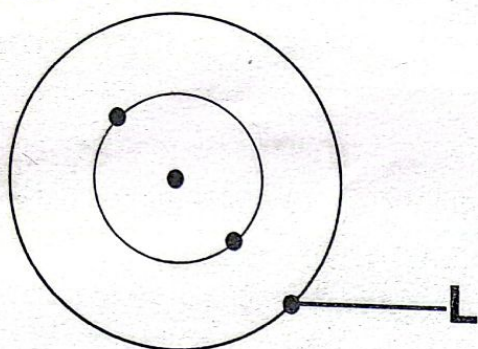
26. A certain state of matter has the following characteristics: It has no fixed shape since it takes the shape of the container and particles are far apart. Identify the state of matter.

- A. Liquids B. Gases.
- C. Solids D. Plastic.

27. Identify the part of the microscope that is used to concentrate light reflected by the mirror on the specimen on the stage.

- A. Diaphragm B. Aperture
- C. Fine adjustment knob D. Condenser

28. What is the name given to the part labelled L in the diagram below?



- A. Electrons
B. Protons
C. Energy levels
D. Electron configurations.
29. Which one of the following is not **likely** to be attracted by a magnet if placed close to each other?
- A. Aluminium B. Iron
C. Glass D. Coin
30. The tomatoes in the school farm were not doing so well even after adding manure and fertilisers to the soil. One of the learners believed the problem was the soil pH. What would you advise them to do?
- A. Check the soil pH
B. Add more fertilisers
C. Use organic manure
D. Add more water and lime.

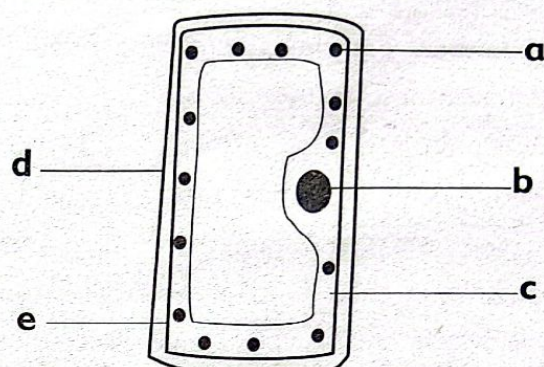
SECTION 2

(40 mks)

31. a) During a career day at Utumishi School, Grade 8 learners were taught about careers related to Integrated Science. Name two careers they were likely to be told. (2mks)

- b) A laboratory is a room that contain different types of equipment and apparatus. What are some of the rules we should follow while in the laboratory? (2mks)

- c) A Grade 9 learner observed the following image in a light microscope. Use the image below to answer the questions that follow. (2mks)

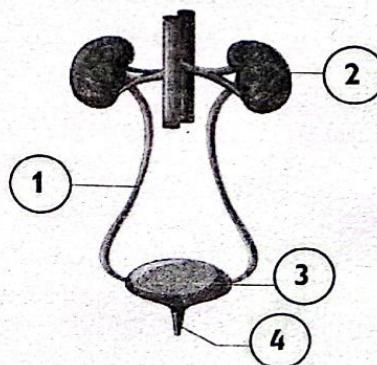


- i. Identify the part marked d.
ii. What is the function of the part marked a?
32. Fill the table below using the appropriate answers. (3mks)

Common laboratory accident	Causes of accident
Burns.	
Electric shock.	
Falls.	

33. Identify the scientific skills that are being explained in the situations below. (2mks)
- a) A Grade 7 learner took measurements of the length and width of his class and calculated the area of the class.
- b) Agriculture learners realised that their crops are wilting and watered them immediately.

34. Study the diagram below and use it to answer the questions that follow. (1mks)



- a) Name the part marked:
- 1 -
2 -

a) Identify the disorder that causes hard deposits of minerals and salt in the kidney. (1mk)

b) How can one take care of their kidneys to ensure they do not get kidney disorders? (1mk)

35. When learning about the human skin, learners learnt about epidermis. What is its function? (1mk)

36. a) The female reproductive system has quite a lot of functions. Identify two functions of the female reproduction systems. (2mks)

b) What are some of the challenges associated with the menstruation cycle? (2mks)

37. Grade 8 learners carried out an experiment to investigate one of the physiological processes in living organisms. Study the pictures of the set up they made and use it to answer the questions that follow.



a) Identify the physiological processes being investigated. (1mk)

b) What are some of the factors that affect the physiological process above? (2mks)

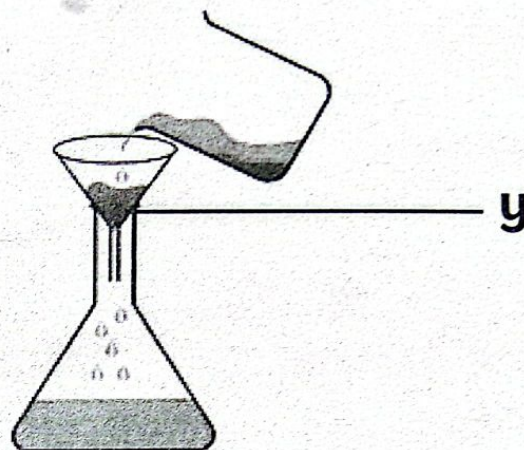
38. a) Help Tanya a Grade 7 learner to define the following terms: (1mks)

i. Conductor _____

i. Non- conductor _____

b) What are some of the safety measures one should consider when handling an electrical application? (2mks)

39. Use the image below to answer the questions that follow.



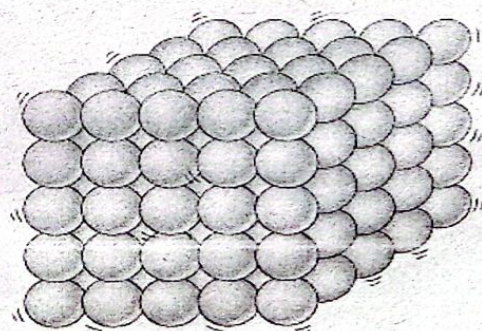
a) Name the process above. (1mk)

b) Identify the solid y. (1mk)

40. a) Define the term atom. (1mk)

b) Calculate the atomic number of an element A whose mass number is 16 and the number of neutrons is 10. (1mk)

41. A Grade 8 learner came across the following diagram that shows the arrangement of particles in a substance. Use it to answer the questions that follow.



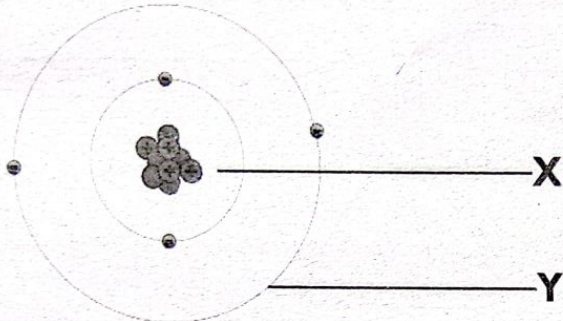
a) Identify the substance being investigated. (1mk)

b) Name another characteristic of the substance. (1mk)

42. A matatu driver slowed down the car to allow learners to cross the road. Explain the energy transformation that took place. (1mk)

43. Magnets can be used to reduce environmental pollution. How can this take place? (1mks)

44. Use the diagram below to answer the questions that follow.



- a) Identify the part marked:
- X
 - Y

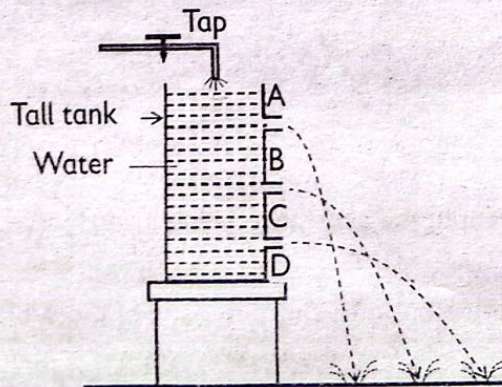
a) What are the sub atomic particles found in part marked x? (1mk)

45. Different elements are used to create a different substance. Write down the uses of the elements and compounds below. (2mks)

- Sodium chloride _____
- Gold _____

46. An element P has an atomic number of 7. Write down the electronic configuration of the element. (1mk)

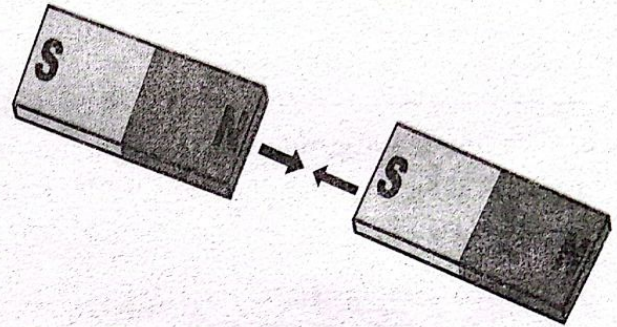
47. Learners in Grade 9 carried out the experiment below. Use it to answer the questions that follow.



a. What was the process being investigated? (1mk)

b. Define the term pressure. (1mk)

48. Two Grade 9 learners were carrying out an experiment using the magnets below. What is the expected observation that took place? (1mk)



49. Explain why the shoe below exerts a higher pressure compared to flat shoes?



50. A Grade 8 learner was carrying out an experiment in the laboratory. After finishing the practical, he drew the table below to record his findings. What are the expected outcomes?

Indicator	Base	Acid
Litmus	Blue	
Methyl orange		Pink

DISTINCTION KJSEA ASSESSMENT TEST

JUNIOR SCHOOL

GRADE NINE - 2025



9
PREMIER
1 Hr 30 Min

INTEGRATED SCIENCE PAPER 2

LEARNER'S NAME: _____
ASSESSMENT NUMBER: _____ **GRADE:** _____
SCHOOL: _____ **DATE:** _____

Instructions to the learner

- This paper has two sections totaling 30 marks.
- Read instructions in each part and answer the questions appropriately.

SECTION 1

Practical Activity: Diffusion using potassium permanganate

Materials needed:

- Potassium permanganate crystals or solution (KMnO_4)
- Water
- Beaker or glass container
- Stopwatch or timer
- Stirring rod

Steps to follow.

- Fill a beaker or glass container with a small amount of water (about 200 ml).
- Place a small crystal or two of potassium permanganate into the water. If using potassium permanganate solution, add a few drops to the water.
- Observe the colour change and how the crystal or solution begins to spread through the water.
- Without stirring, observe how the potassium permanganate moves through the water.
- Record the time it takes for the colour to noticeably spread across the water.
- Repeat the experiment with varying conditions like different water temperatures (cold and warm).
- Record the effects of temperature and concentration on the rate of diffusion.

Questions

- Identify the process that was being investigated.
- What is the observation that was made after some time?
- What happens if you use warm water instead of distilled water?
- Explain the colour changes after some time.

SECTION 2

Modelling the electron arrangement of magnesium

Materials to use for modelling

- Paper or cardboard: To draw the atom and its energy levels.
- Coloured markers or pens: To differentiate between the various energy levels and orbitals.
- Stickers or beads: To represent the electrons visually.

Create a physical model of magnesium

- Research the electron arrangement of magnesium.
- Start by drawing the nucleus of magnesium and labelling it with 12 protons and 12 neutrons.
- Draw three concentric circles around the nucleus to represent the energy levels.
- Label each circle with the appropriate energy level.
- Use the coloured markers or stickers to represent the electrons in each energy level (2 electrons in the first level, 8 in the second, and 2 in the third).