

Candidate's Name		Assessment No.	
School Name		School Code	
Candidate's Sign		Date	



004-2025

905/1

JUNIOR SCHOOL ASSESSMENT

GRADE 9

JESMA
004

- INTEGRATED SCIENCE (THEORY)- 905/1

TIME: 1 hour 40 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your **name** and **assessment number** in the spaces provided above.
2. Write the **name** and **code** of your **school** in the spaces provided above.
3. **Sign** and write the **date** of the assessment in the spaces provided above.
4. This paper consists of **two** sections: **A** and **B**.
5. Section **A** comprises Multiple Choice Questions numbered **1** to **30**.
6. Section **B** comprises of Structured Questions number **31** to **45**.
7. Answer **ALL** the questions in section **A** on the separate **ANSWER SHEET** provided.
8. Answer **ALL** the questions in section **B** in the spaces provided in this **QUESTION PAPER**.
9. Do **NOT** remove any page from this question paper.
10. Answer **ALL** the questions in English.

For official use only
SECTION B

Task	Task 1	Task 2			Task 3			Task 4			Task 5
Question	31	32	33 - 34	35	36 - 37	38	39	40	41	42	43-45
Score per question											
Maximum score	04	02	04	03	03	02	02	08	04	02	06
Candidates score per task											

This paper consists of 8 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

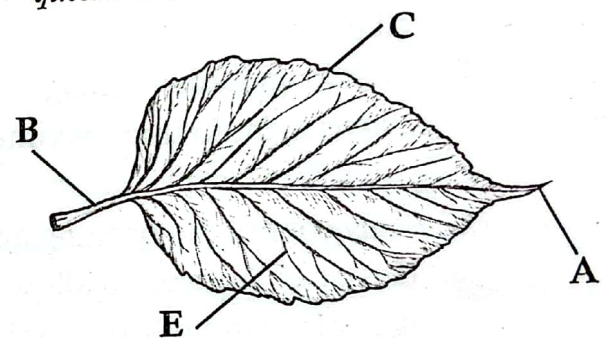
SECTION A (30mks)

1. The movement of particles in a liquid is **best** described as
 - A. fast and fixed
 - B. fast and random
 - C. slow and fixed
 - D. slow and irregular
2. Which one of the following is **not** a basic quantity?
 - A. Time
 - B. Volume
 - C. Length
 - D. Mass
3. Which one of the following is the strongest magnet?
 - A. U shaped magnet
 - B. Horse shoe magnet
 - C. Ring shaped magnet
 - D. Bar magnet
4. Which one of the following is a factor that affects the rate of diffusion?
 - A. Osmoregulation
 - B. Rate of diffusion
 - C. Temperature
 - D. Connection gradient
5. _____ is the process by which water molecules move from a region of high concentration to a region of low concentration across a semi-permeable membrane.
 - A. Osmosis
 - B. Diffusion
 - C. Absorption
 - D. Transpiration

6. During an Integrated lesson on pressure, learners listed the following factors that affect pressure in solids.
 - i) *Force and height*
 - ii) *Area and density*
 - iii) *Weight and gravitational force*
 - iv) *Force and area*Which of the two factors were **correctly** listed?
 - A. (i)
 - B. (ii)
 - C. (iii)
 - D. (iv)
7. Which among the following is **not** a sub-atomic particle found in an atom?
 - A. Electron
 - B. Energy level
 - C. Neutron
 - D. Proton
8. The property that allows metals to be hammered and rolled into thin sheets known as foils is
 - A. malleability
 - B. ductility
 - C. metallic lustre
 - D. metal hardness
9. The following are uses of a certain metal;
 - i) *Used in galvanizing steel*
 - ii) *Used in making sunscreen products*
 - iii) *Used in die-casting*
 - iv) *Used in making car batteries*The metal described above is
 - A. Brass
 - B. Lead
 - C. Duralumin
 - D. Zinc

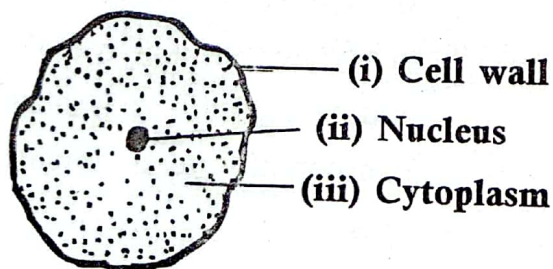
10. Alloys are made by mixing two or more metals or non-metals. Which among the following alloys are **wrongly** grouped with their composition?
- A. Duralumin - aluminium, magnesium and carbon
- B. Brass - copper and zinc
- C. Bronze - copper and tin
- D. Stainless steel - iron, chromium and nickel
11. Suppose a company wants to soften borehole water using chemicals. Which is the **best** chemical to use?
- A. Chlorine
- B. Sodium carbonate
- C. Washing powder
- D. Sodium bicarbonate
12. The skin is made up of three layers. What is the function of epidermis?
- A. Supply of blood
- B. Production of hair
- C. Insulation against heat loss
- D. Protection against physical injury
13. Grade Seven learners were classifying solutions into acids and bases. Which among the solutions was **wrongly** classified?
- A. Toothpaste - base
- B. Vinegar - acids
- C. Soap solution - base
- D. Anti-acid tablet - acid
14. Mr. Munene was teaching about sexually transmitted diseases. Which of the following diseases were they likely **not** to discuss?
- A. Syphilis
- B. HIV/AIDS

- C. Cholera
- D. Gonorrhea,
15. Below are pairs of apparatus used to measure fixed volume in a laboratory. Which one is **not**?
- A. Syringe and test tube
- B. Burette and pipette
- C. Beaker and syringe
- D. Round-bottomed flask and burette
- The diagram below shows the external structure of a leaf. Study it and answer questions 16 and 17.*

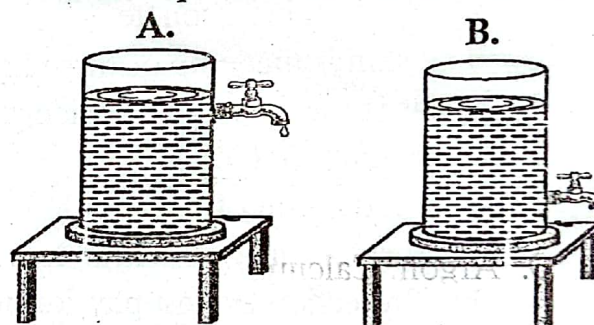


16. Which of the following choices describes the adaptations of the part labelled E?
- A. They are green to manufacture plants food
- B. They are pointed and grows towards the direction of sunlight
- C. They are spread all over the surface of the leaf and have xylem that facilitate in transport of manufactured food
- D. They are spread all over the leaf and have xylem that facilitate the transport of water and mineral salts

17. The part labelled A is the
 A. petiole B. midrib
 C. apex D. veins
18. The arrangement of leaves on the branch of a plant is known as
 A. leaf arrangement
 B. pattern
 C. leaf mosaic
 D. leaf adaptation
19. What is the function of the guard cells?
 A. They have air spaces that allow gases to diffuse in and out of the cell easily
 B. Their longitudinal arrangement allows them to trap maximum sunlight
 C. They control the opening and closing of stomata to allow water loss and gaseous exchange
 D. They transport water and mineral salts
20. Which of the following choices show the collective name for xylem and phloem tissues?
 A. Chloroplast tissues
 B. Vacuole
 C. Vascular bundles
 D. Guard cells
21. The diagram below shows components of an animal cell seen under light microscope.



- Which part is **wrongly** matched?
- A. (i) B. (ii) and (i)
 C. (ii) D. (ii) and (iii)
22. Teacher Mary's desk has a mass of 12.5kg. The surface area of the part of the desk in contact with the ground is 0.025m^2 . What pressure does the desk exert on the ground beneath it?
 A. 0.5N/m^2 B. 5000N/m^2
 C. 50N/m^2 D. 500N/m^2
23. The experiment below was carried out by Grade 8 learners from Uamini Comprehensive School. The learners noticed the tanks were similar but the taps fixed at different levels.



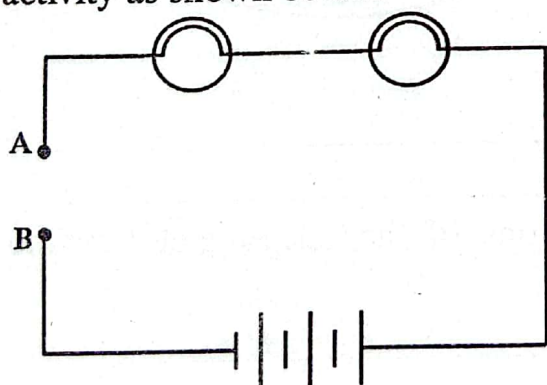
Which tank released water at highest pressure if the tanks were opened and why?

- A. B - because pressure in liquids is exerted in specific direction
 B. A - because pressure in liquids increases with depth and density
 C. B - because pressure in liquids increases with depth and density
 D. A - because pressure in liquids is the same due to gravitational force

24. During an Integrated lesson, learners discussed chemical symbols of elements. Which one shows the **correct** chemical symbols for each element?

Gold Silver Aluminium Argon

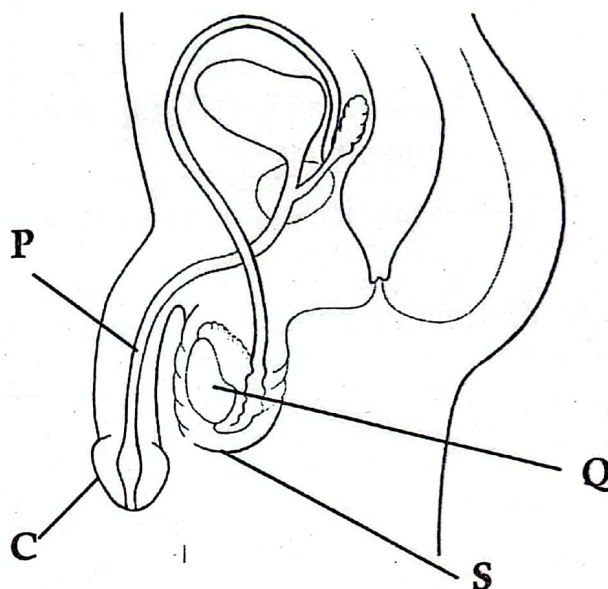
- | | | | |
|-------|----|----|----|
| A. G | Si | Au | A |
| B. Au | Si | Al | A |
| C. Ag | Si | AL | Ar |
| D. Au | Ag | Al | Ar |
25. Which among the following electronic arrangements shown below represents Argon?
- | | |
|----------|------------|
| A. 2.8.8 | B. 2.8.8.2 |
| C. 2.8 | D. 2.8.2 |
26. Which group below shows metals **only**?
- | |
|-----------------------|
| A. Oxygen, Neon |
| B. Silicon, Magnesium |
| C. Calcium, Lithium |
| D. Argon, Calcium |
27. Grade 9 learners carried out an activity as shown below.



When placed between gap AB, which material **cannot** make the bulb light?

- | | |
|---------------|------------------|
| A. Steel wool | B. Copper wire |
| C. Graphite | D. Plastic ruler |

28. The diagram below represents a male reproductive system.



Which one of the labelled parts is **correctly** matched to its function?

- | |
|-------------------------------------|
| A. P introduce sperms to the vagina |
| B. Q produce hormones and sperms |
| C. C store sperms |
| D. S allow passage of sperms |
29. Which among the following choices is **not** a way of preventing rusting?
- | |
|---|
| A. Maintaining cleanliness by washing tools |
| B. Oiling and greasing |
| C. Galvanizing |
| D. Making alloys |
30. Complete the equation below.
- Iron + Oxygen →
- | |
|------------------------------|
| A. Hydrated iron (III) oxide |
| B. Iron oxide |
| C. Rust |
| D. Iron (III) oxide |

SECTION B: (40mks)

31. Classify the following change as temporary physical change, permanent change or temporary chemical change. (4mks)

a) Heating candle wax

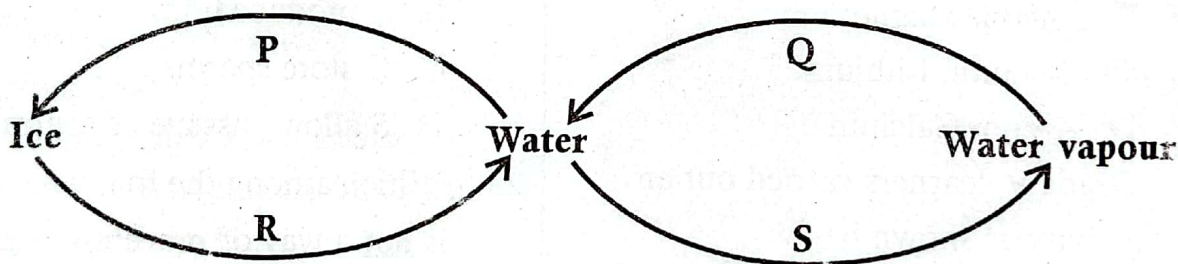
b) Heating copper (II) sulphate crystals in a boiling tube

c) Heating ice cubes in a beaker

d) Heating potassium manganate (VII) in a boiling tube

32. Draw and label an atom. (2mks)

33. Grade Eight learners from Karatina Comprehensive School saw a chart that shows the following:



Name process

(2mks)

a) S

b) Q

34. Use a word equation to represent reactions of the following elements to form a compound.

a) Copper + Oxygen →

(1mk)

b) Hydrogen + Oxygen →

(1mk)

35. Mr. Naaman entered Grade 9 classroom during an Integrated Science lesson. After one minute all learners noticed his perfume was smelling all over.

a) The process that took place was

(1mk)

b) Explain how the process took place that the learners could smell the perfume. (2mks)

36. State the law of magnetism. (1mk)

37. State the functions of the following parts in the excretory system.

a) Kidneys (1mk)

b) Urinary bladder (1mk)

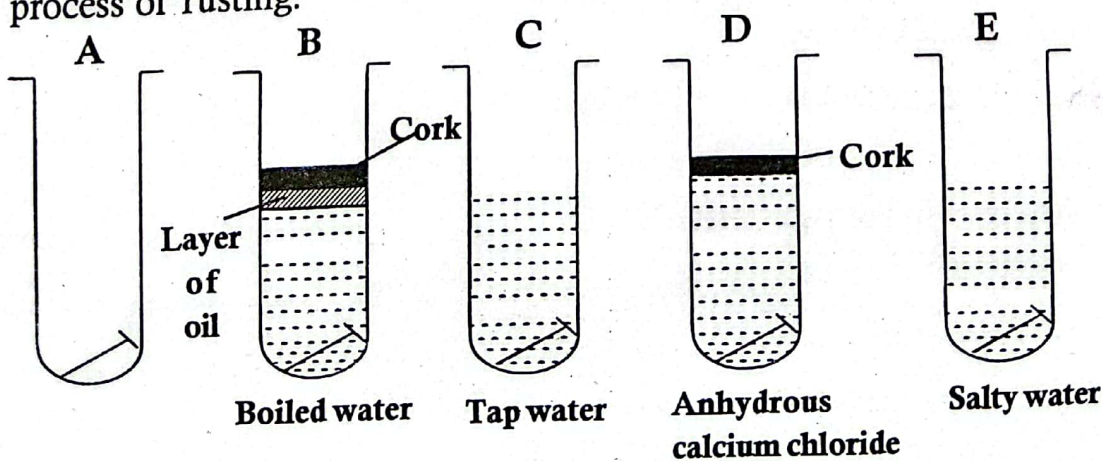
38. The mass number of an atom of element Y is 9 and its atomic number is 4.

a) Find the number of neutrons in the atom. (1mk)

b) What is the number of electrons in the atom? (1mk)

39. Define rusting. (2mks)

40. Grade Nine learners carried out an experiment shown below to investigate the process of rusting.



After five days, the learners went back to the laboratory to make their observations.

a) In which test-tubes did rusting not take place? (2mks)

i) _____

ii) _____ (4mks)

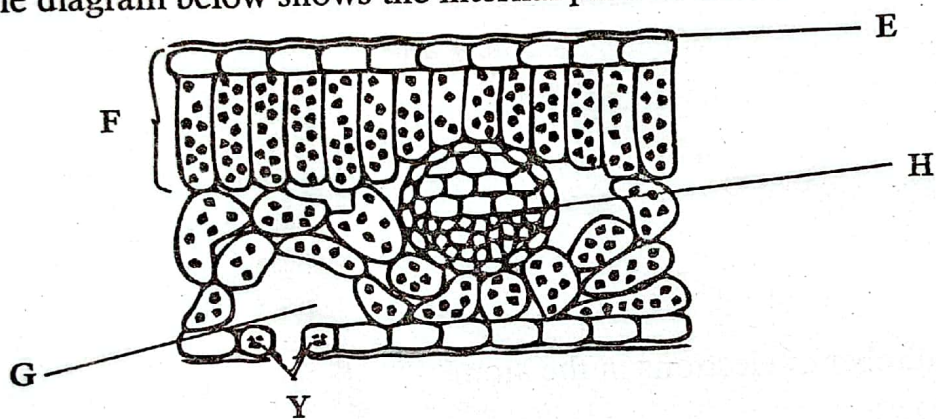
b) Explain your answer in (a) above.

c) If rusting occurred, which test tube did rusting take place first? (1mk)

_____ (1mk)

d) Give a reason for your answer in (c) above.

41. The diagram below shows the internal parts of a leaf.



a) The part labelled F is the _____ (1mk)

b) The part labelled H is known as the _____, it contains _____ and _____ tissues. (3mks)

42. The raw materials required for photosynthesis are _____ and _____ (2mks)

43. Photosynthesis takes place in two stages. They are _____ and _____ (2mks)

44. Complete the equation below. (2mks)

Water + _____ (sunlight/chlorophyll) = _____ + oxygen

45. Compare the distribution of stomata on the upper and lower epidermis of the leaf and give a reason for your answer. (2mks)
