GRADE 8 INTEGRATED SCIENCE

1. Lelei used a microscope to observe a specimen. The eyepiece lens had a magnification of 5x and the total magnification was 100x. Calculate the magnification of the objective lens Lelei used. (2 marks)

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2. Grade 8 learners at Blessed school were learning about components of a cell and their functions. They drew the table below. Match the cell component to its function. (5 marks)

Cell component	Function
a) Chloroplast	Carries information from one cell generation to another
b) Cell membrane	Present in cells which carry out photosynthesis
c) Nucleus	Gives a definite shape to a plant cell
d) Cytoplasm	Controls movements of substances in and out of the cell
e) Cell wall	Where chemical reactions takes place

3. James, a Grade 8 learner viewed a slide of a plant cell under a light microscope. The features of the cell appeared blurred. Explain what James should have done to obtain a sharper image of the cell. (1 mark)

_____

_____

4. Among the information found on packaging labels of products are the elements and compounds contained in the product. A farmer bought the fertilizer shown below for his crops.

a) Name the three elements present in the fertilizer represented by use of chemical symbols. (3 marks)

i. _____
ii. _____
iii. _____

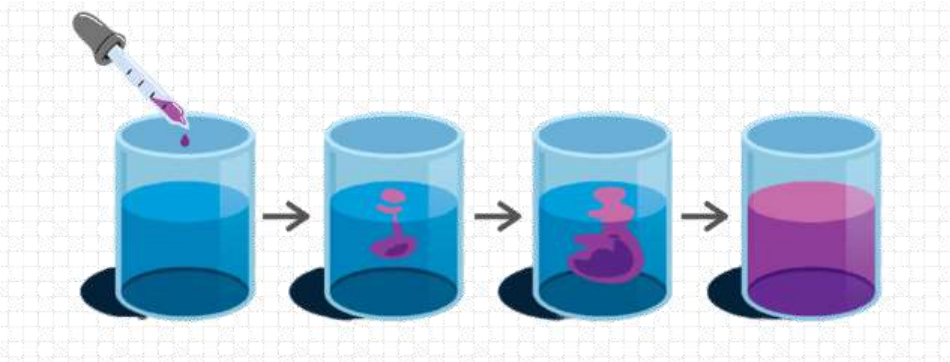
b) List down three importance of such packaging labels. (3 marks)

i. _____
ii. _____
iii. _____ 2

5. Fire can be categorised into various classes according to their causes. Outline the causes of the classes of fire shown below. (5 marks)

Class of fire	Cause
Class A	
Class B	
Class C	
Class D	
Class E	
Class F	

6. Agness, Grade 8 learners placed crystals of Potassium Manganate (VII) at the bottom of a beaker of cold water as shown below. They left the beaker for some time. They observed that the purple colour of the Potassium permanganate (VII) had spread throughout the water.



Name the process by which the purple colour spread out _____. (1 mark)

7. Materials such as water, oxygen and nutrients are able to move into cells and other materials such as urea and carbon (IV) oxide are released out of cells through the cell membrane. Define the following terms in relation to this movement.

   a) Osmosis (2 marks)

   _____

   _____

   b) Diffusion (2 marks)

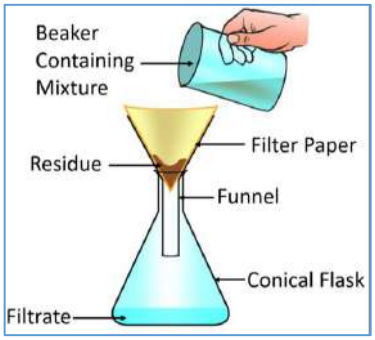
   _____

   _____

8. Grade 8 learners visited a health facility in their community. A health worker taught them about sexually transmitted infections that are very common among the youth. Mention three such infections she could have talked about. (3 marks) 3

   i. _____
   ii. _____
   iii. _____

9. Grade 7 learners at Bidii school were learning mixtures and methods of separating them. They learnt about the method shown below.



   a) Name the method of separating mixtures shown above _____. (1 mark)

   b) Name two mixtures that can be separated by the above method. (2 marks)

   i. _____
   ii. _____

10. The pH scale is the most common way to measure how acidic or basic a substance is. Solutions with a pH less than 7 are _____. While solutions with a pH more than 7 are _____. (2 marks)

11. Grade 8 learners filled up containers of different shapes with water. They then observed the shape of water in each of the containers.

a) What did they observe? (1 mark)

_____

_____

b) What conclusion did they make? (1 mark)

_____

_____

c) Explain why the water behaved the way it did. (1 mark)

_____

_____

4

12. One of the characteristics of animals is excretion, which refers to the removal of waste products from the body. The human excretory system removes waste from our bodies.

a) Mention two body organs that help in excretion (2 marks)

i. _____
ii. _____

b) Mention 3 parts that make up the Urinary system and their functions (3 marks)

i. _____
ii. _____
iii. _____

c) There are several ways of maintaining a healthy skin. Mention 3 ways (3 marks)

i. _____
ii. _____
iii. _____

13. Water is a common compound. Each compound has a unique chemical formula that shows the elements that make up the compound. Write down the elements that react to form water. (2 Marks)

_____

_____

14. The Grade 8 teacher of Integrated Science in Wonder school drew the table below to check the learners' understanding of elements and compounds. State whether it is a compound or an element as per the description given. (4 marks)

		Element or compound
a	It is made up of two or more elements combined together by chemical means	
b	It is made up of only one kind of tiny particles known as atoms	
c	It can be broken down into its constituent elements by chemical means	
d	It cannot be broken down into simpler substances either by physical or chemical means	

5

15. Teenagers experience many changes during adolescence. Mention two changes that happen to both boys and girls during this stage (2 marks)

i. _____

ii. _____

Integrated Science

Answers

1. 20x

6

2. a) Chloroplast — Present in cells which carry out photosynthesis.

   b) Cell membrane — Controls movement of substances in and out of the cell.

   c) Nucleus — Carries information from one cell generation to another.

   d) Cytoplasm — Where chemical reactions take place.

   e) Cell wall — Gives a definite shape to plant cells.

3. James should have adjusted the fine focus knob to obtain a sharper image of the cell.

4. a)

   - Nitrogen (N)
   - Phosphorus (P)- Potassium (K)

   b)

   - Help users know the contents of the product.
   - Provide instructions on proper usage.
   - Warn about any hazards or safety precautions.

5. Class A — Caused by burning of ordinary combustibles like wood, paper, and cloth.

   Class B — Caused by burning of flammable liquids like petrol, oil, and alcohol.
   Class C — Caused by electrical faults or energized electrical equipment.

6. Diffusion

7. a) Osmosis — The movement of water molecules from a region of high water concentration to a region of low water concentration through a selectively permeable membrane.

   b) Diffusion — The movement of particles from a region of high concentration to a region of lowconcentration until they are evenly distributed.

8. - HIV/AIDS

   - Gonorrhoea

   - Syphilis

9. a) Filtration

   b) Sand and water, chalk and water

10. Solutions with a pH less than 7 are **acidic**, while solutions with a pH more than 7 are **basic/alkaline**.

11. a) They observed that water took the shape of each container.

    b) They concluded that water has no definite shape.

    c) Water behaved that way because it is a liquid and liquids flow to take the shape of their container.

12. a)

    - Kidneys- Skin

    b)

    - Kidneys — Filter blood to produce urine.
    - Ureters — Carry urine from the kidneys to the bladder.
    - Bladder — Stores urine before it is released.

    c)

    - Bathing regularly to remove dirt and sweat.
    - Eating a balanced diet for proper nourishment.
    - Drinking enough water to keep the skin hydrated.

13. Water — Hydrogen and Oxygen

14. a) It is made of two or more elements combined together by chemical means — **Compound**

b) It is made up of only one kind of tiny particles known as atoms — **Element**

c) It can be broken down into its constituent elements by chemical means — **Compound**

d) It cannot be broken down into simpler substances either by physical or chemical means — **Element**

15. - Growth of pubic and underarm hair

- Development of pimples (acne)