DEPARTMENT FOR CURRICULUM,
LIFELONG LEARNING AND EMPLOYABILITY
Directorate for Learning and Assessment Programmes
Educational Assessment Unit

Annual Examinations for Middle Schools 2022

YEAR 7 INTEGRATED SCIENCE TIME: 1h 30min

Name: _____ Class: _____

1. The diagram below describes the change of state of water.

a. Use the words in the box to fill in the sentences in the diagram below.

ice	**cool**	**evaporates**	**freezing**	**0^{0}C**
	heat	**condensation**	**100^{0}C**	

When you _____ water to a temperature of _____, it _____ to form water vapour.

⇩

If you _____ water vapour, it changes to form water. This is called _____.

⇩

When water reaches a temperature of _____, it turns into a solid. Solid water is called _____. This process is called _____. (8)

b. Arrange the substances in order of increasing space between the particles.

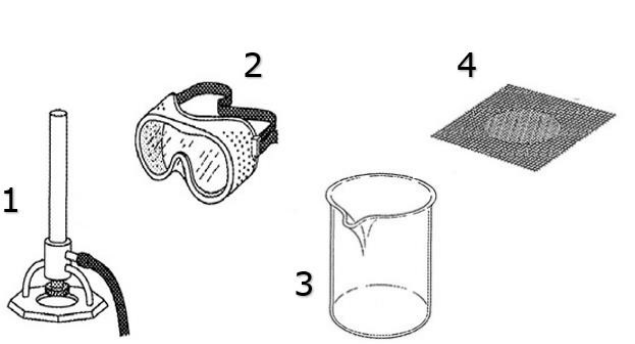
i. milk, air, table: _____, _____, _____

ii. steam, oil, paper: _____, _____, _____ (2)

Total: 10 marks

2. Sandra is in the science lab doing an experiment. She needs to time how long it takes for 70ml of water to reach 90°C.

a. These are some apparatus that she needs to use. Write the name of each apparatus.



1. _____
2. _____
3. _____
4. _____
5. _____ (5)

b. Sandra needs **three** other apparatus to do the experiment. Name them.

apparatus 1: _____

apparatus 2: _____

apparatus 3: _____ (3)

c. Draw and label a scientific diagram of how Sandra needs to set up the apparatus.

(3)

d. Write down **three** safety rules that Sandra needs to follow during this experiment.

Safety Rule 1: _____

Safety Rule 2: _____

Safety Rule 3: _____ (3)

Total: 14 marks

3. A fire broke out at the Miżieb Woodland. Firefighters used their knowledge of the fire triangle to control it.

a. Continue the following sentences.

i. They throw soil, to remove the _____.

ii. Water on the fire helps to remove the _____. (2)

b. Explain why you should never use water to control fire on a frying pan.

_____ (1)

Total: 3 marks

4. Dad was preparing a cup of tea.

a. On the diagram, label a solid, a liquid and a gas.

(3)

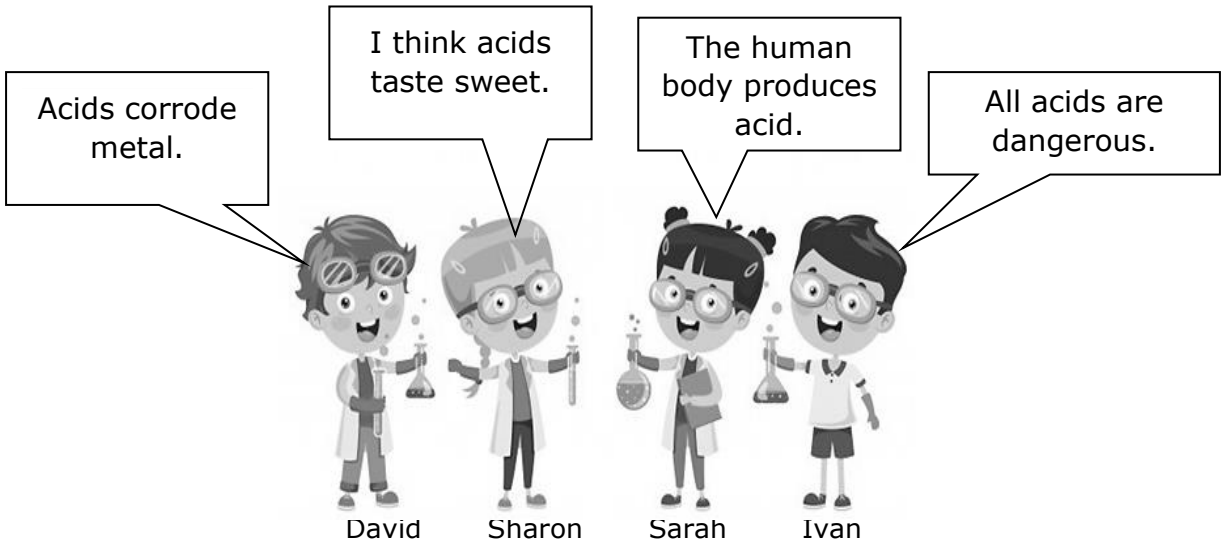
b. In the boxes below, draw the arrangement of particles in a solid, a liquid, and a gas.

solid	liquid	gas

(3)

Total: 6 marks

5. These students are working with chemicals. Read their statements.



a. **Two** of the students are right. Write their names.

Student 1: _____ Student 2: _____ (2)

b. Sharon wants to test her theory, but she would break a lab rule. Write this rule.

_____ (1)

c. David thinks that acids are corrosive. In the box, draw the safety label that would show this.

(1)

d. The table shows the pH of the chemicals that the students are holding.

i. Each chemical was tested with both red and blue litmus paper. Fill in the table to state the colour of each litmus paper **at the end** of each test.

		Results	
Name	**pH value**	**Litmus red**	**Litmus blue**
David	5		
Sharon	8		
Sarah	13		
Ivan	2		

(4)

ii. Write down the name or names of the students who have an acid.

_____ (2)

iii. Write the name of the student whose acid is the strongest.

_____ (1)

iv. During a reaction of acids with metal, bubbles are seen. Ivan thinks it is hydrogen. Describe a test that Ivan can carry out to prove that the gas is hydrogen.

_____

_____ (1)

v. The students would like to perform a neutralisation reaction. Write the names of two students who should mix their chemicals.

_____ (1)

e. Sarah always takes some vinegar with her when she goes to the beach. She says that it would help decrease the pain of a wasp sting. Fill in the missing words:

i. The chemical in the wasp sting is an _____.

Vinegar is an _____ and when it reacts with the wasp sting, the poison is _____.

(3)

ii. If you try using vinegar on a bee sting, it will hurt even more. Explain why.

_____

_____ (1)

Total: 17 marks

6. a. Malta's Environment and Resources Authority lists whales and dolphins as very important mammals in our marine environment.

i. List **two** characteristics of mammals.

_____

_____ (2)

ii. List **two** vital functions that whales and dolphins can perform.

_____

_____ (2)

iii. Name **one** physical feature that fish have but whales and dolphins do not.

_____ (1)

b. Fin Whales are often spotted off Malta as they migrate in search of krill which is their preferred food. Krill is a small invertebrate that feeds on microscopic plants.

i. Name the process by which microscopic plants build their own food.

_____ (1)

ii. Draw a food chain to represent the feeding relationships between the three organisms named above.

(2)

iii. Name **one** consumer in your food chain.

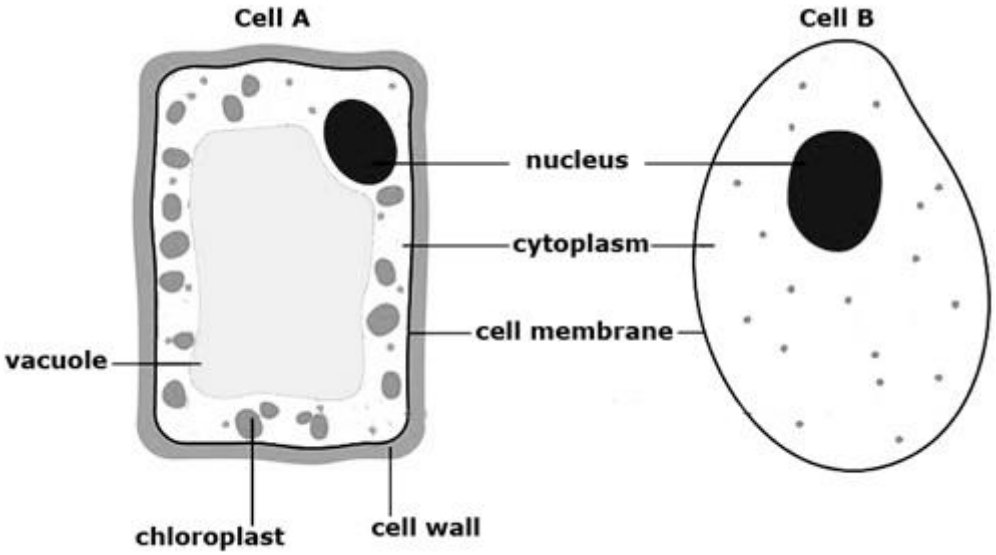
_____ (1)

c. After having been declared an endangered species, the population of Fin Whales started increasing again, thanks to conservation action. Explain the meaning of the term **endangered**.

_____ (1)

Total: 10 marks

7. a. The diagram below shows two labelled cells, Cell A and Cell B.



i. State which one is the typical animal cell.

_____ (1)

ii. Give **two** reasons for your answer.

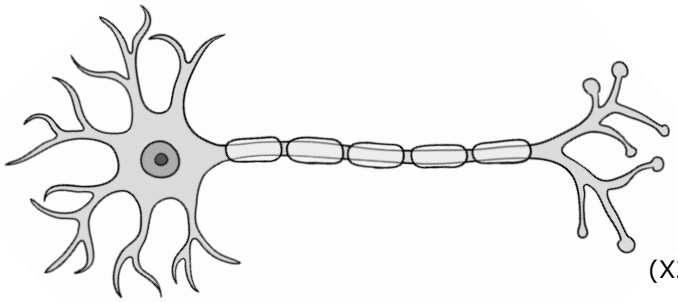
_____

_____ (2)

iii. State the function of the nucleus.

_____ (1)

b. A medical lab scientist observed the nerve cell under a light microscope, as shown below.



i. The nerve cell is appearing 200 times larger than its actual size. The eyepiece lens of the light microscope is magnifying the image of the cell by 10 times. Calculate the power of the objective lens used. (Show your working)

(2)

ii. Explain why a nerve cell can be described as a **specialised cell**.

_____ (1)

iii. Name the body system that a nerve cell is part of and name the main body organ of this system.

body system: _____

main organ: _____ (2)

iv. State **one** function of the body system you have mentioned above.

_____ (1)

Total: 10 marks

8. Marco re-potted a plant that had been in his bedroom window.

a. i. On the photo above, label with an 'X' the structures that obtain water for the plant. (1)

ii. Give **one other** function of these structures.

_____ (1)

b. Explain why placing the plant in a window is beneficial.

_____

_____ (2)

c. Marco planted some Lilies in his garden. In spring they produced the attractive flowers seen in the picture below. Two of the flower structures have been labelled.

i. Explain how attractive flowers are useful for plants.

_____

_____ (2)

ii. Describe the roles of the stamen and the stigma in the process of plant reproduction.

_____

_____

_____ (2)

Total: 8 marks

9. a. This is a section from the manual of an electric kettle. Explain the importance of the precaution mentioned in the manual.

EN **Electric Kettle**
Important safety instructions

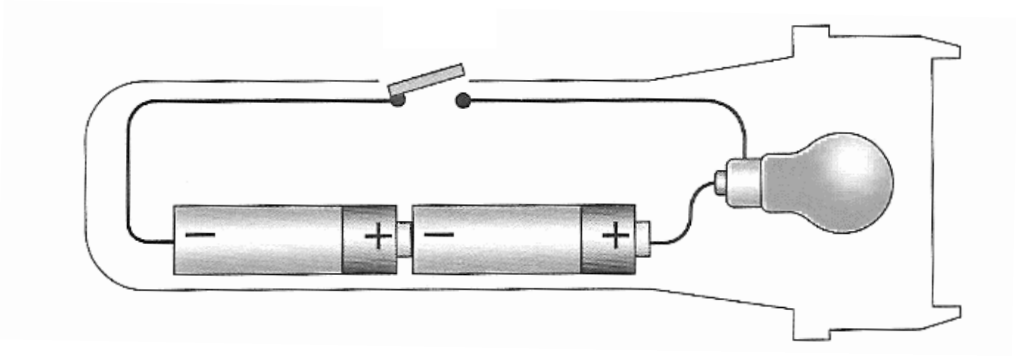
READ CAREFULLY AND STORE FOR FUTURE USE.

- Take care not to spill water on to the connector when placing the kettle on to the base and when taking it off the base.

_____

_____ (1)

b. The diagram below shows a circuit within a torch.



i. Explain the purpose of the batteries in the torch.

_____ (1)

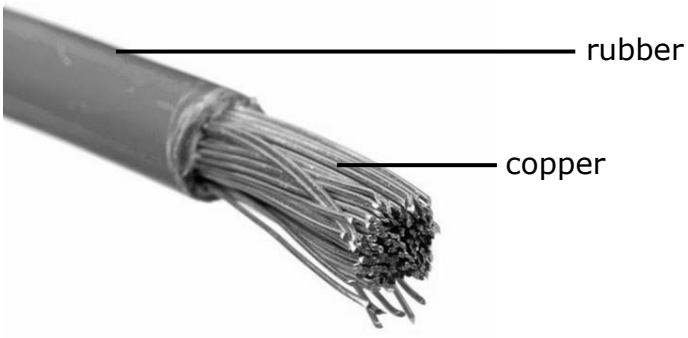
ii. Explain how the switch is controlling the torch circuit.

_____ (1)

iii. Use symbols, to represent the electrical circuit in the torch.

(2)

c. The picture shows a detail from a wire being used inside the torch. Explain the choice of materials used.

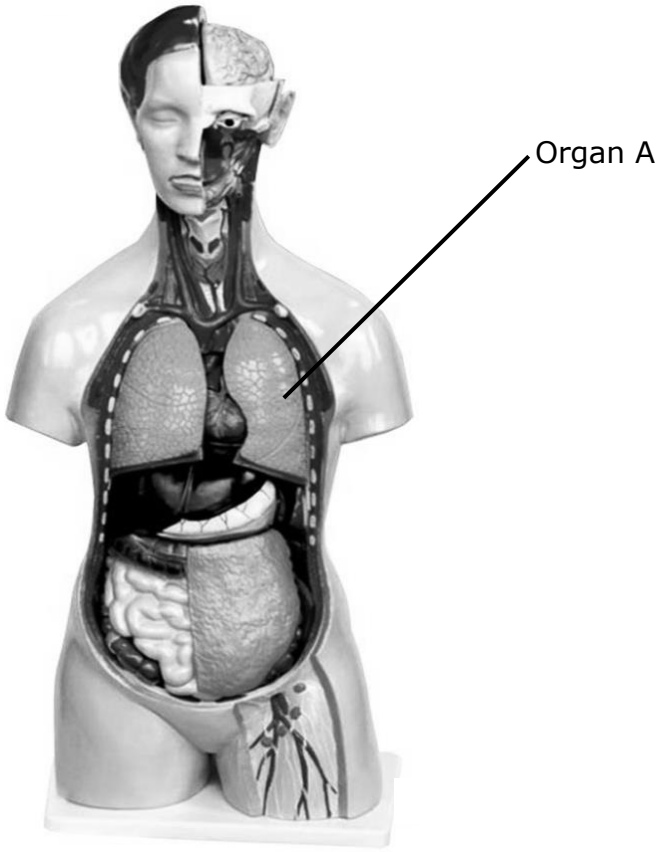


_____

_____ (2)

Total: 7 marks

10. The diagram below shows a model of a human torso.



a. i. Name '**organ A'**.

_____ (1)

ii. A tube connects the mouth and nose to **organ A**. Explain why a blockage in this pipe will affect the function of **organ A** negatively.

_____

_____ (1)

b. i. On the diagram, label with an 'X' an organ that pumps blood. (1)

ii. Name the body system that organ 'X' is part of.

_____ (1)

c. The model of the human torso is also showing parts of the digestive system. Name **two** organs that are part of the digestive system.

_____ (2)

Total: 6 marks

11. a. Hairs grow on some boys' chest during puberty.

i. Define the term 'puberty'.

_____ (1)

ii. List **two** changes that occur in a girl's body during puberty.

_____

_____ (2)

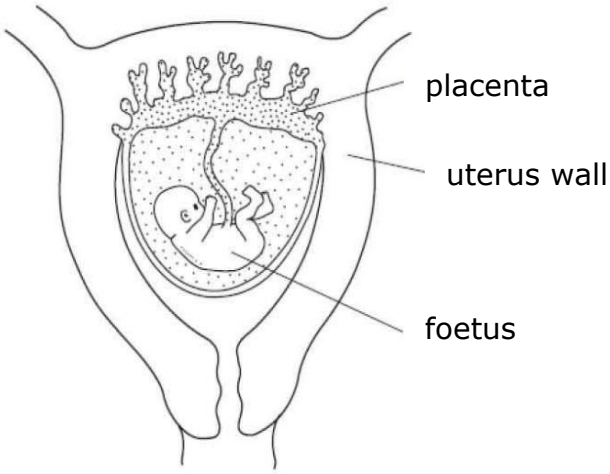
b. Marica is a 22-year-old lady. She eats a lot of fruit and vegetables and walks for 20 minutes to and from work daily. Due to her busy schedule she goes to sleep at 12am and wakes up at 5am. Marica goes to her doctor for routine check-ups regularly. She smokes around 4 to 5 cigarettes a day and drinks 2 litres of water daily. Marica is pregnant.

From the lifestyle described above, name **two** changes that Marica should do to prevent any harm to the developing foetus.

_____

_____ (2)

c. The diagram shows Marica's developing baby inside the uterus.



i. Name the structure that connects the placenta with the foetus.

_____

_____ (1)

ii. Describe **two** functions of the placenta.

_____

_____ (2)

iii. On the diagram, label with an 'S' the sac that provides protection to the baby. (1)

Total: 9 marks