FUKIEN SECONDARY SCHOOL
S1 First Term Uniform Test (2021-2022)
Integrated Science
(45 minutes)

Date: 11th November 2021 Name: _____
Time: 8:30a.m. – 9:15a.m. Class: _____ No.: _____

Instructions to students:
1. Write your name, class and class number on both the question paper and the answer sheets.
2. Answer ALL questions.
3. Write down all the answers on the answer sheets.
4. Hand in the question paper and the answer sheets at the end of the examination.
5. The total mark of the paper is 100.

I. Multiple Choice Questions (40 marks)

1. Which of the following statements is INCORRECT?
   A. Scientists from different branches often work together to solve problems.
   B. Scientific knowledge can help us to use natural resources wisely.
   C. Scientists often do experiments to collect evidence.
   D. Our present scientific knowledge can solve all the problems.

2. Which of the following is **NOT** an example of observation?
   A. Iron sinks in water.
   B. Water boils.
   C. Fuel can give out energy.
   D. Flowers are red.

3. When we use a chemical with the below warning label, what safety precaution should we take?

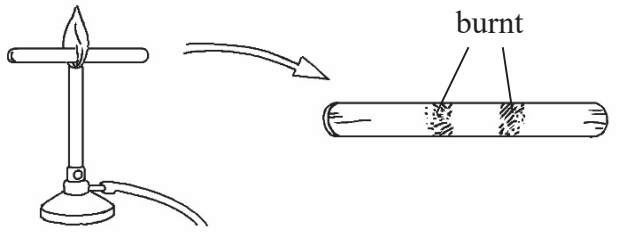
   A. Keep the chemical away from fire.
   B. Wear safety gloves.
   C. Wear a mask.
   D. Perform the experiment inside a fume cupboard.

4. Which of the following is a laboratory rule?
   A. Wash our hands after doing the experiment.
   B. Eat and drink in the laboratory.
   C. Throw solids into the sink.
   D. Do experiments without the teacher's permission.

5. Which of the following belong to science?
   (1) To explain how rain forms
   (2) To invent light bulbs
   (3) To study the Mars
   A. (1) and (2) only
   B. (1) and (3) only
   C. (2) and (3) only
   D. (1), (2) and (3)

6. Which of the following apparatus is/are usually used to mix solutions?
   (1) Spatula
   (2) Thermometer
   (3) Glass rod
   A. (1) only
   B. (3) only
   C. (1) and (2) only
   D. (2) and (3) only

7. Put a piece of wood horizontally in the Bunsen flame. The middle of the piece of wood is not burnt.



   Which of the following conclusions about the above experiment is the best explanation?
   A. The inner cone of the Bunsen flame is not very hot.
   B. The temperature of the Bunsen flame is not very high.
   C. Striking back occurs.
   D. The inner cone of the Bunsen flame contains unburnt town gas.

8. Norman used Bunsen flame *A* to heat up some water. He took 5 minutes. Charles used Bunsen flame *B* to heat up the same amount of water. He took 6 minutes. Which of the following is/are correct?
   (1) Flame *B* is hotter than flame *A*.
   (2) Flame *A* is noisier than flame *B*.
   (3) Flame *B* has a regular shape.
   A. (1) only
   B. (2) only
   C. (1) and (3) only
   D. (2) and (3) only

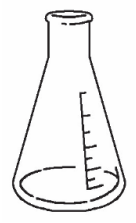
9. Which of the following is a proper method of handling spills of chemicals on the skin?
   A. Put a bandage on the affected area.
   B. Rinse the affected area under running water.
   C. Pour some harmless chemical over the affected area.
   D. Use tissue paper to absorb the chemicals.

10. What factors will be changed by turning the collar of a Bunsen burner?
   (1) The amount of town gas supplied to the Bunsen burner
   (2) The amount of oxygen supplied to the Bunsen burner
   (3) The temperature of the Bunsen flame
   A. (1) and (2) only
   B. (1) and (3) only
   C. (2) and (3) only
   D. (1), (2) and (3)

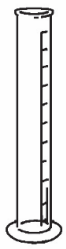
11. Which of the following processes is NOT involved in the water cycle?
   A. Cloud formation
   B. Boiling
   C. Evaporation
   D. Condensation

12. Which of the following factors can affect the rate of evaporation of water on a wet umbrella?
   (1) The exposed surface area of the umbrella
   (2) The material of the umbrella
   (3) The amount of water on the umbrella
   A. (1) and (2) only
   B. (1) and (3) only
   C. (2) and (3) only
   D. (1), (2) and (3)

13. Which of the following apparatus should be used to make accurate measurement of the volume of a solution?

A. 

B. 

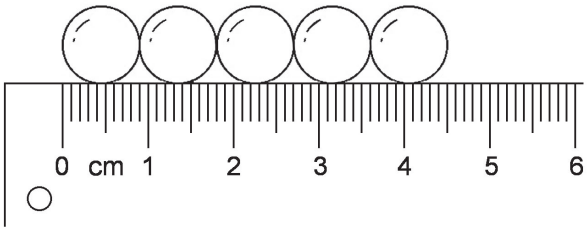
C. 

D. 

14. Which of the following apparatus is used to hold a test tube for heating?
    A. Tongs
    B. Clamp
    C. Forceps
    D. Test tube holder

15. Which of the following is NOT a unit for measuring volume?
    A. Litre
    B. Cubic metre
    C. Kilogram
    D. Millilitre

16. The figure below shows five identical marbles lined up against a ruler. What is the diameter of each marble?

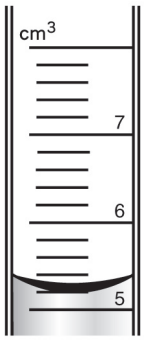


    A. 0.9 mm
    B. 0.9 cm
    C. 4.7 mm
    D. 4.7 cm

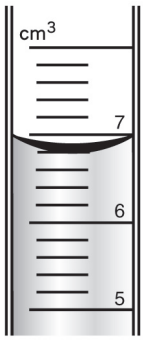
17. Under which of the following conditions will the rate of evaporation of water be the highest?

	Temperature	**Relative humidity**
A.	35 ºC	50%
B.	20 ºC	50%
C.	35 ºC	80%
D.	20 ºC	80%

18. Winnie dropped two marbles into a measuring cylinder. The volumes of water before and after she dropped the marbles are shown below. What is the volume of each marble?



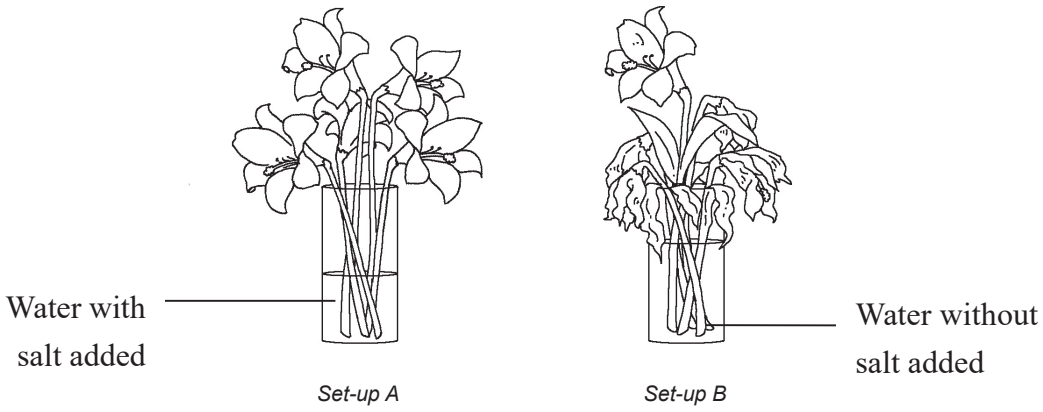
Before dropping the marbles



After dropping the marbles

A. 0.8 cm^3
B. 1.2 cm^3
C. 1.4 cm^3
D. 1.6 cm^3

19. Joe does an experiment to test whether adding salt helps cut flowers stay fresh for longer. The following figure shows the experimental set-ups after 10 days.



Joe's experiment is NOT a fair test because

(1) salt is not added to the water in set-up B.
(2) there are some leaves on the stems in set-up B.
(3) the amounts of water in the two set-ups are different.

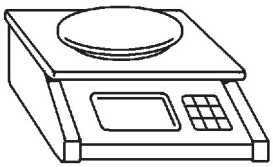
A. (2) only
B. (1) and (2) only
C. (1) and (3) only
D. (2) and (3) only

20. Which of the following statements about boiling and evaporation are correct?
    (1) Both boiling and evaporation occur at 100°C.
    (2) Energy is absorbed by water in both boiling and evaporation.
    (3) In both boiling and evaporation, the rate increases as temperature increases.
    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

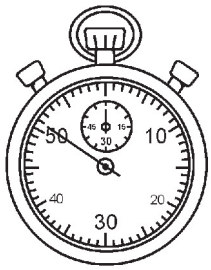
End of Section I

II. Structured Questions (60 marks)

1. (a) The following diagrams show some measuring instruments in the laboratory. (6 marks)



A



B

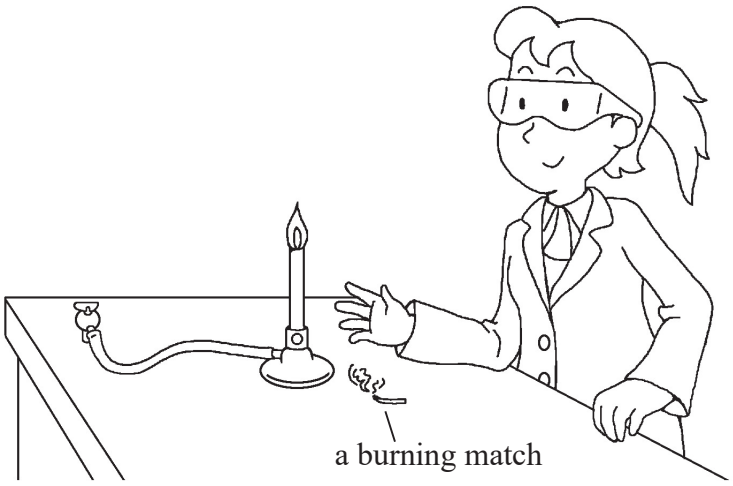
Write down the name of each instrument and the common unit(s) of measurement used.

(b) Look at the hazard warning label on a bottle of chemical shown below. (4 marks)

(i) What does the hazard warning label tell us about this chemical?
(ii) List one safety precaution when handling this chemical.

(c) Give one function to each of the following parts in a Bunsen burner. (4 marks)
(i) Air hole
(ii) Tongs

2. Karen is doing an experiment with a Bunsen burner.



(a) Write down TWO safety precautions taken by Karen. (4 marks)

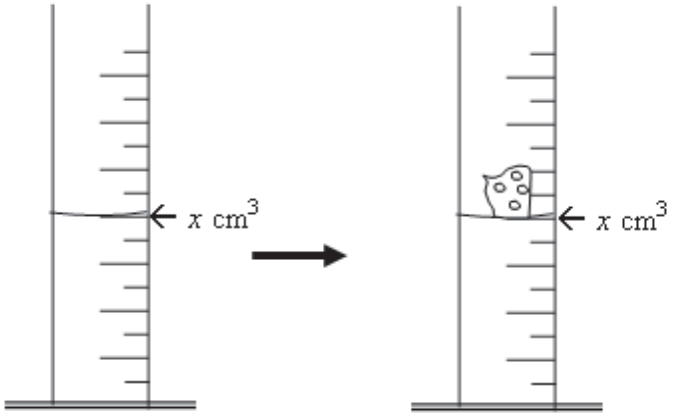
(b) Write down one mistake that Karen has made. (2 marks)

(c) Write down THREE things Karen should do if there is a fire when she is doing the experiment. (3 marks)

(d) Write down THREE components that are necessary for a Bunsen flame to start. (6 marks)

(e) Suggest how Karen can turn off the flame. (2 marks)

3. Kenny puts a cork into a measuring cylinder containing water as shown below.



(a) Kenny cannot measure the volume of the cork with this method. Why? (1 mark)

(b) The diagrams below show a weight and a thread which are given to Kenny so that he can measure the volume of the cork.

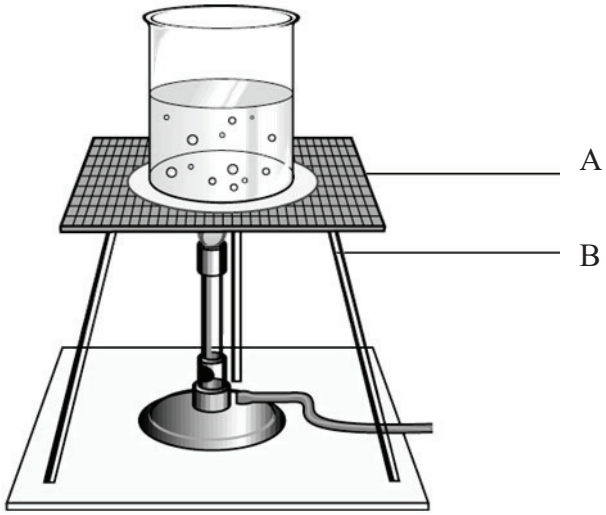

a weight


a thread

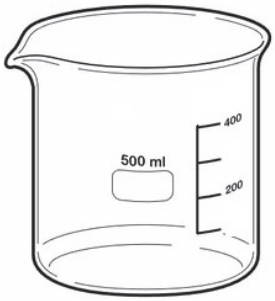
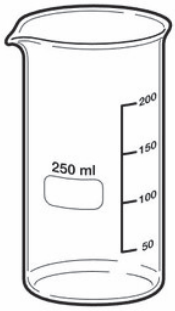
Suggest how he can measure the volume of the cork by completing the sectional diagram on the answer sheet to show his method. (2 marks)

(c) Let the volume of the weight be y cm^3. Let the total volume of the water, weight and cork be w cm^3. Hence, find the volume of the cork in terms of x, y and w. Show your calculations. (2 marks)

4. Tommy thinks that water boils faster if a larger area of the water surface is exposed. He uses the following set-up to boil water.



(a) He wants to test his idea using two set-ups, *P* and *Q*. Fill in the blanks below to help Tommy do a fair test. (2 marks)

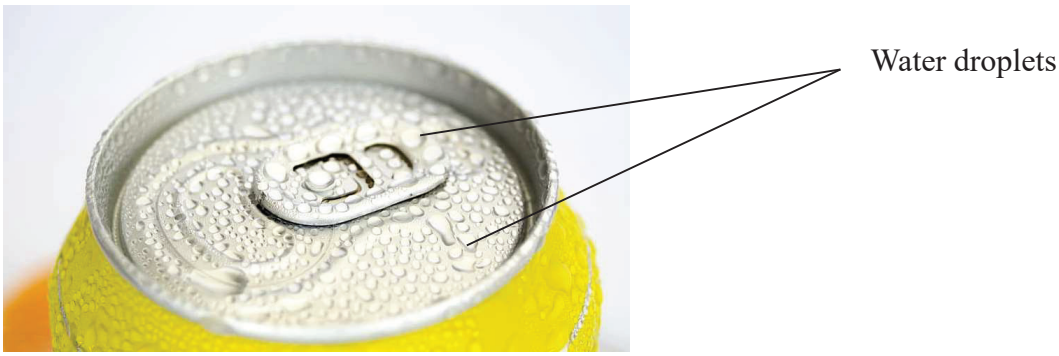
Variables	**Set-up *P***	**Set-up *Q***
Size of beaker	 500 cm^3 beaker	 250 cm^3 beaker
Volume of water	150 cm^3	(i)_____
Temperature of water at the beginning	50 °C	(ii)_____
Temperature of water at the end	100 °C	100 °C
Time taken for water to boil	7 minutes 10 seconds	9 minutes 3 seconds

(b) According to the variables in part (a), identify the independent variable and the dependent variable respectively. (2 marks)

(c) Name apparatus *A* and *B*. (4 marks)

(d) Based on the result in part (a), what can conclude in Tommy's experiment? (1 mark)

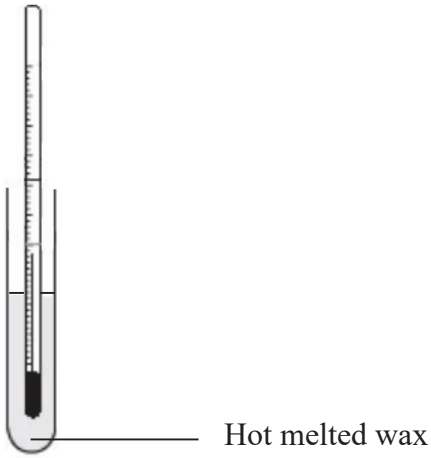
5. Anna took out a soft drink from the freezer. Sooner, some water droplets formed on the surface of the can.



(a) Where did the water droplets come from? (1 mark)

(b) State the name of the process which leads to the formation of water droplets on the can. Also, explain how the water droplets formed. (3 marks)

6. The set-up below is used to study the temperature change when cooling some hot melted wax.



The hot melted wax is exposed to room temperature and it begins to change its physical change during the cooling process. The temperatures of wax at different times are recorded as below.

Time (min)	0	2	4	6	8	10	12
Temperature (°C)	70	60	57	57	57	50	42

(a) Plot a graph of the temperature against the time. (5 marks)

(b) According to the result, what is the physical state of wax

(i) at temperature higher than 70 °C? (1 mark)

(ii) at temperature lower than 36 °C? (1 mark)

(c) What is the freezing point of wax? Explain your answer. (2 marks)

(d) If the hot melted wax is exposed to a hotter environment, does it affect the freezing point of the wax? State any change in this experiment. (2 marks)

End of Paper