FUKIEN SECONDARY SCHOOL

S1 First Term Uniform Test (2020-2021)

Integrated Science

(45 minutes)

Date: 22nd October 2020 Name: _____

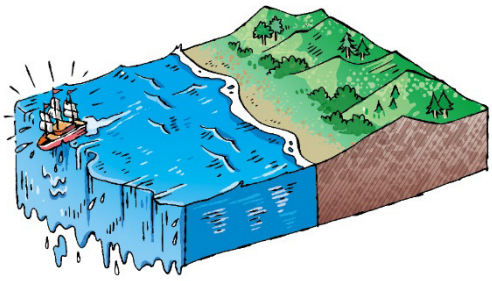
Time: 8:30a.m. – 9:15a.m. Class: _____ No.: _____

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. In the past, people thought that the Earth was flat, and it ended at edges. Boats might fall off the edges if they went too far from the coast.



In the 16th century, Magellan sailed round the world successfully. This provided evidence that the Earth is round. From this example, we can tell that

A people in the past did not know anything about the Earth.
B scientific discoveries can be harmful.
C science cannot explain everything in nature.
D scientific knowledge is subject to change when there are new discoveries.

2. We study science because

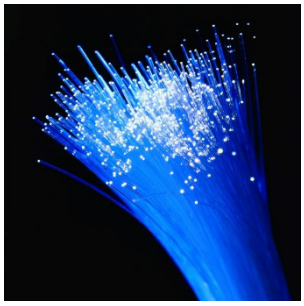
(1) science helps us solve all problems.
(2) science helps us understand how the natural world works.
(3) scientific knowledge is true forever.

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

3. Which of the following is / are scientific discovery / discoveries?

(1) 

Structure of DNA

(2) 

Optical fibres (光纖)

(3) 

Internet

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

4. Which of the following is / are scientific invention(s)?

(1) J. K. Rowling wrote her first novel *Harry Potter* in 1997.
(2) Willis Carrier made the first air conditioner in 1902.
(3) Joseph Priestley identified a gas (later known to be oxygen) that supported burning in 1774.

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

5. Which of the following is **NOT** an example of observation?

A. Water evaporates.
B. Ice floats on water.
C. Leaves are green.
D. Rice can give us energy.

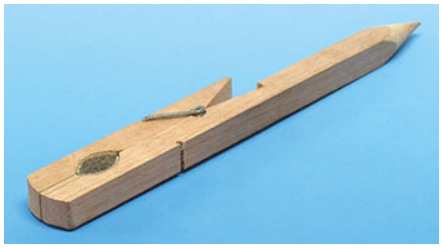
6. To measure the volume of a bottle of liquid, which of the following apparatus should we use?

A Dropping bottle
B Dropper
C Measuring cylinder
D Reagent bottle

7. The following laboratory apparatus is used for

A containing gases.
B holding liquids.
C measuring the volume of a liquid.
D transferring liquids.

8. What is the use of the following piece of apparatus?



A To hold a flask
B To hold a dropper
C To hold a test tube
D To hold a measuring cylinder

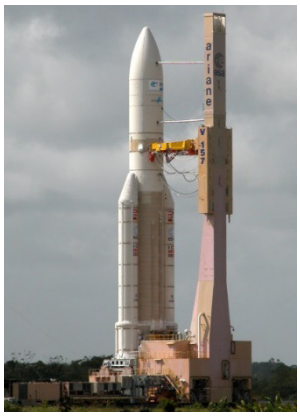
9. It is dangerous to run in the laboratory because
A it is very noisy.
B we may knock something down.
C we may be punished by our teacher.
D we may not finish the experiment in the lesson.

10. Which of the following are the potential dangers in the laboratory?
(1) Eating in the laboratory
(2) Keeping the laboratory clean
(3) Entering the laboratory before the teacher arrives
A (1) and (2) only
B (1) and (3) only
C (2) and (3) only
D (1), (2) and (3)

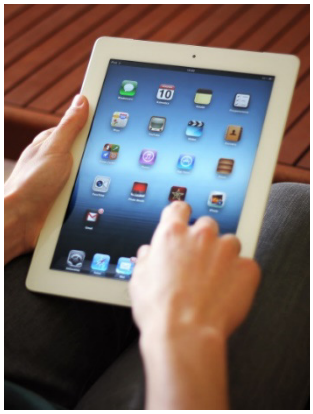
11. When something gets into the eye of a student during an experiment, he / she should
    A use a bandage to cover his/her eye.
    B put on a pair of safety spectacles to protect his / her eyes.
    C wash his / her eye with an eye wash bottle.
    D wash his / her eye with disinfectants.

12. When we burn our finger accidentally in the laboratory, we should
    (1) report it to the teacher at once.
    (2) wash the affected area with running water.
    (3) cover the affected area with bandage at once.
    A (2) only
    B (1) and (2) only
    C (1) and (3) only
    D (1), (2) and (3)

13. What are the most suitable units for the height, length or thickness of the following objects?


Height of a rocket

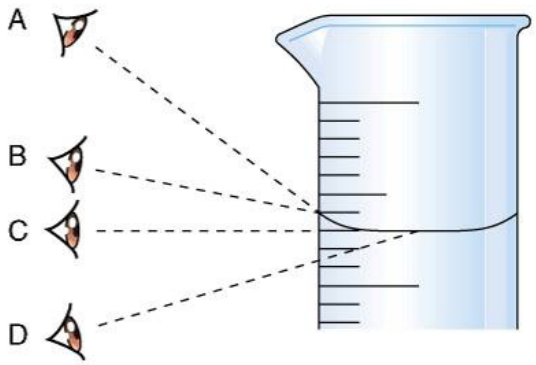

Route length of the Peak Tram


Thickness of a tablet

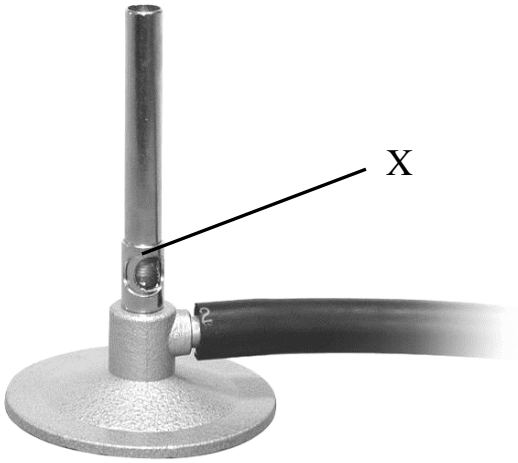
	Height of a rocket	Route length of the Peak Tram	Thickness of a tablet
A	m	km	cm
B	m	km	mm
C	km	m	mm
D	km	m	cm

14. Which of the following apparatus should be used when we measure the pulse rate of a person?
    A Stopwatch
    B Balance
    C Measuring cylinder
    D Thermometer

15. Which of the following is the correct position to read the water level in the measuring cylinder?



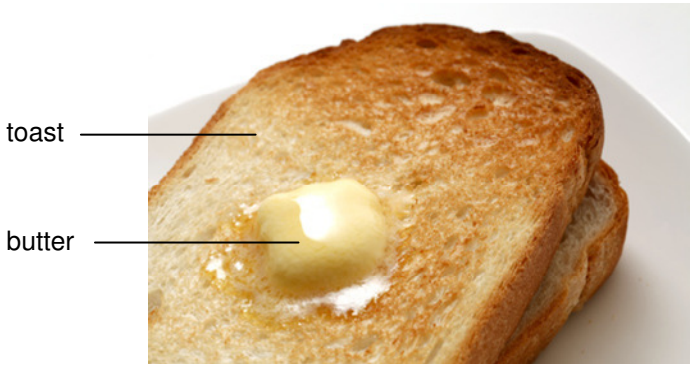
Directions: Questions 16 and 17 refer to the Bunsen burner shown below.



16. What is structure X?
    A Air hole
    B Chimney
    C Collar
    D Gas tap

17. The correct sequence of lighting up the Bunsen burner is
    (1) lighting the match
    (2) opening the air hole
    (3) turning on the gas tap
    (4) closing the air hole
    A (1) → (2) → (3) → (4)
    B (2) → (3) → (1) → (4)
    C (3) → (1) → (4) → (2)
    D (4) → (1) → (3) → (2)

18. A piece of butter melts on a piece of toast.



Which of the following statements about this phenomenon is correct?

A The temperature of the toast is higher than the melting point of butter.
B The temperature of the toast is lower than the melting point of butter.
C When the butter melts, its temperature increases.
D When the butter melts, its temperature decreases.

19. A man puts an ice cube tray with water into a freezer.

Which of the following happens when the water freezes?

(1) The water changes from a liquid to a solid.
(2) The temperature of the water remains unchanged.
(3) The water releases energy to the surroundings.

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

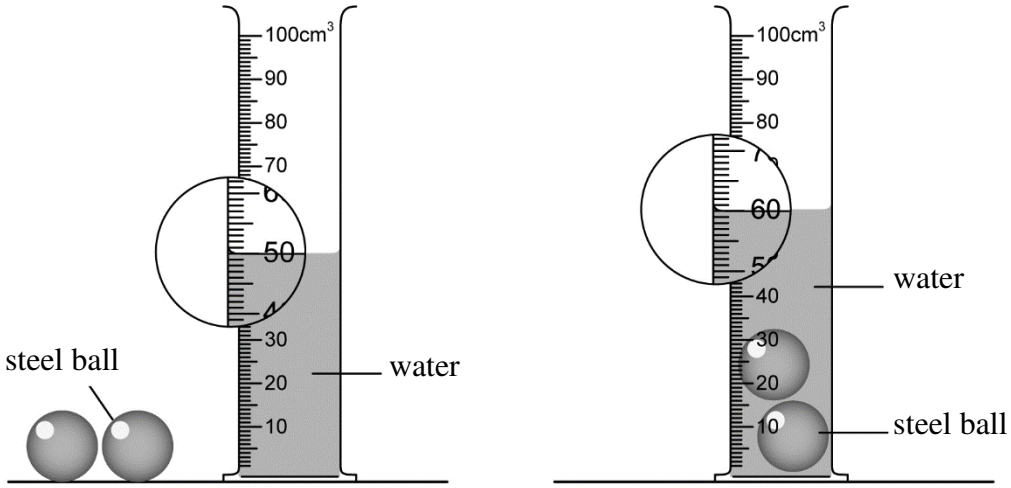
20. The melting point and boiling point of butane (a cooking fuel) are −138 °C and 0 °C respectively. What is the state of butane at room temperature?
    A Gas
    B Liquid
    C Solid
    D A mixture of solid and liquid

End of Section I

II. Structured Questions (60 marks)

1. What unit is suitable for measuring each of the following?
    (a) Volume of a can of coke (1 mark)
    (b) Mass of a man (1 mark)
    (c) Temperature of ice (1 mark)
    (d) Length of an aeroplane (1 mark)

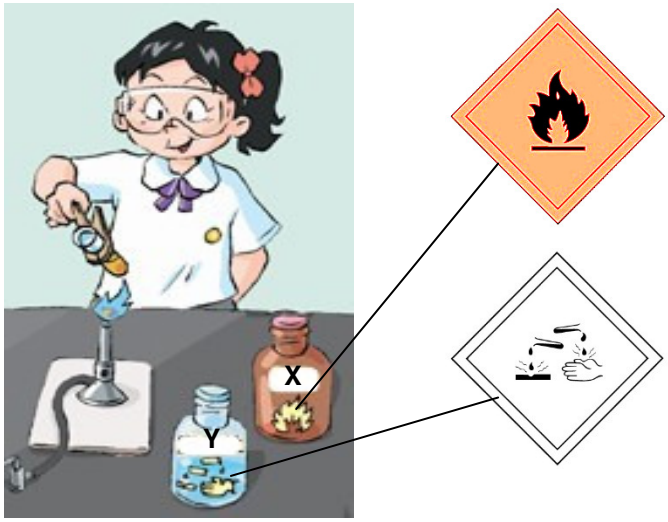
2. Benny carries out an experiment as shown below to make a measurement of the steel balls.



(The two steel balls are identical.)

Calculate the volume of **ONE** steel ball. Show your workings. (3 marks)

3. Mary was doing an experiment as shown below.



(a) What do the hazard warning symbols on bottles X and Y represent respectively? (Hints: explosive / corrosive / toxic / flammable / irritant) (2 marks)

(b) List TWO safety precautions that Mary had taken. (4 marks)

(c) State ONE mistake that Mary had made. Explain your answer. (3 marks)

4. A student lights a candle in a beaker. Then he covers the beaker with a cardboard. The candle stops burning after a while.

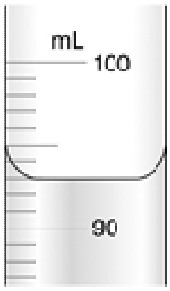
(a) Write down THREE components that are necessary for the candle to start burning. (3 marks)

(b) Why does the candle stop burning after a while? (2 marks)

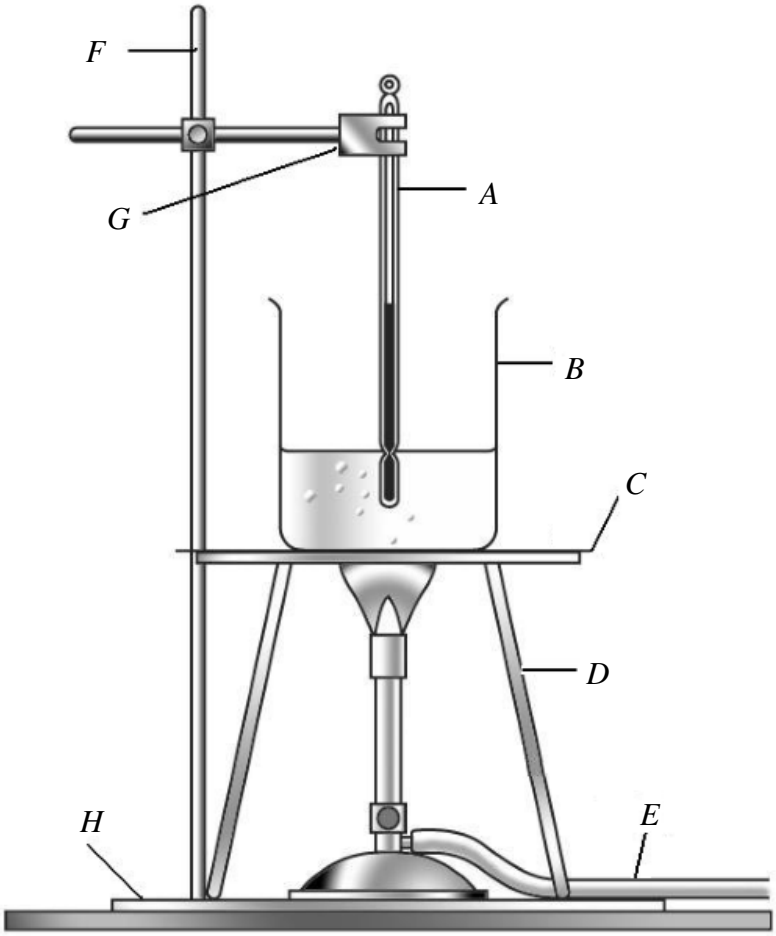
(c) Based on the answer in (b), suggest ONE fire-fighting equipment that works by the same principle. (1 mark)

5. Ben carried out an experiment to measure the boiling point of water.

(a) With reference to the diagram below, what is the volume of water Ben has boiled? (1 mark)



(b) Here is Ben's set-up for the experiment. Label the apparatus A-H. (8 marks)



(c) Ben forgot to open the air hole of the Bunsen burner.

(i) What was the colour of the flame? (1 mark)

(ii) State the changes in shape and noise level of the flame when the air hole is fully open. (2 marks)

(iii) How will Ben's experiment be affected? Explain your answer briefly. (4 marks)

(d) Ben's classmate, Jerry, did the same experiment. Suddenly, the flame changed to green and a loud noise was heard.

(i) What happened to the Bunsen burner? (1 mark)

(ii) What should Jerry do immediately? (2 marks)

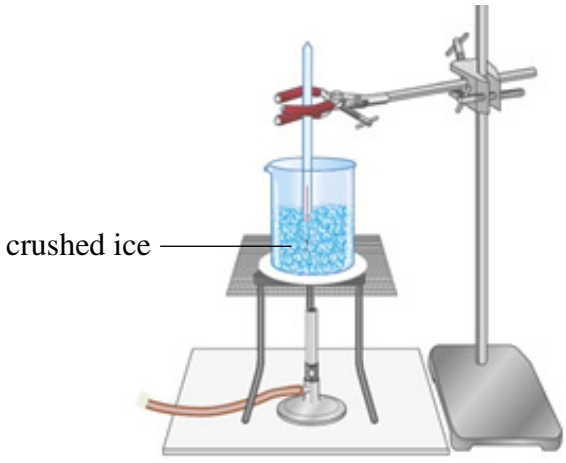
6. Jacky poured some hot water at 80 °C into a cup of instant noodles. Then he covered the cup with the lid. After a while, colourless liquid droplets were found on the lower surface of the lid.

(a) What is the liquid formed on the lid? (1 mark)

(b) Where did the liquid in (a) come from? (1 mark)

(c) How was the liquid in (a) formed on the lid? (4 marks)

7. The set-up below is used to study the temperature change when heating ice to steam.



The ice is then heated with a Bunsen flame with the air hole half-opened. The temperature change is recorded as shown below.

Time (min)	0	2	4	6	8	10	12	14
Temperature (°C)	–4	–2	0	0	40	68	98	98

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

(b) In this experiment:

(i) What is the temperature when ice is melting? (1 mark)

(ii) What is the temperature when water is boiling? (1 mark)

(c) What is the physical state of water at temperature below 0 °C? (1 mark)

(d) Name the process that occurs in 2-4 min. (1 mark)

(e) What is/are the physical state(s) of water

(i) in 4-10 min? (1 mark)

(ii) in 10-14 min? (2 marks)

(f) If 10 g of ice is heated, how many grams of water can be obtained after all the ice has melted? (1 mark)

End of Paper