Nan Hua Primary School
Primary 4 Science
Term 3 Weighted Assessment 2020

Marks	
Section A:	/10
Section B:	/10
Total:	**/20**

Name: _____( )

Class: Primary 4/_____

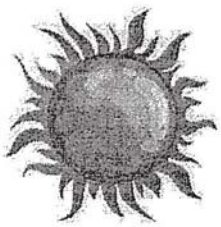
Date: _____

Answer all questions.

Section A: (5 x 2 marks = 10 marks)
For each question from 1 to 5, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the brackets provided.

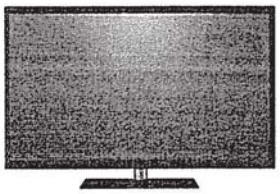
1 Which of the following is **not** a source of heat energy?

(1)



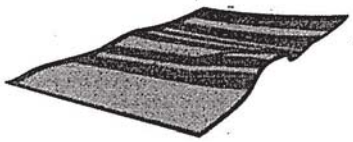
sun

(2)



television (switched on)

(3)



blanket

(4)

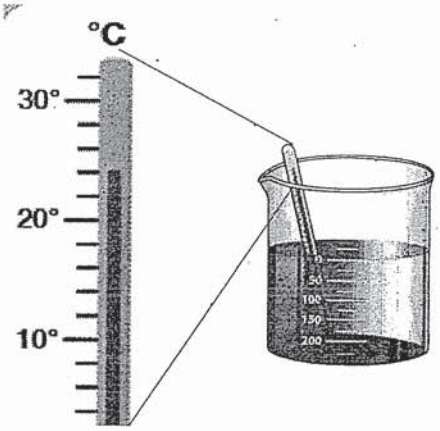


fire

( )

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2 What is the temperature of the liquid below?



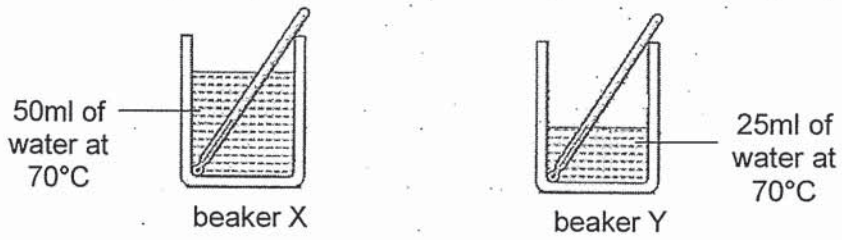
(1) 0°C
(2) 24°C
(3) 30°C
(4) 34°C ( )

3 Which of the following statements about heat and temperature is true?

(1) Temperature is a measure of how hot something is.
(2) We can measure the temperature of an object by touching it.
(3) When an object gains heat, the temperature of the object falls.
(4) A thermometer is used to measure the amount of light and amount of heat. ( )

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4 Meixing filled beaker X with 50ml of water and beaker Y with 25ml of water. She warmed up the water in both the beakers to 70°C.



Which of the following statement(s) is/are correct?

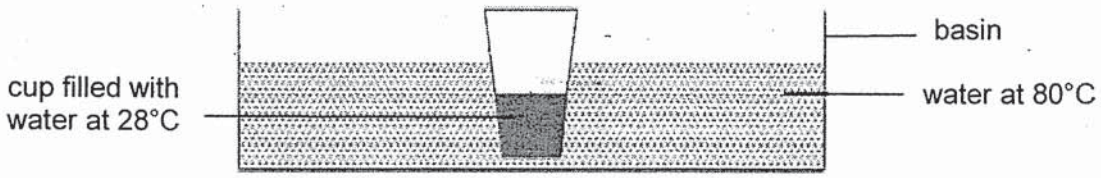
A: More heat is needed to warm up the water in beaker X than the water in beaker Y to 70°C.

B: Beaker Y has more heat than beaker X.

C: Beaker X and beaker Y have the same amount of heat.

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

5 A cup filled with water at 28°C was placed in a basin with water at 80°C as shown below.



What would the temperature of the water in the cup likely be after 15 minutes?

(1) 25°C
(2) 28°C
(3) 55°C
(4) 80°C ( )

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Section B: Structured questions (10m)

For questions 6 to 8, write your answers in the space provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

6 Sasha left a cup of hot milk in her room. She recorded the temperature of the milk every 10 minutes as shown in the table below.

Time (min)	Temperature (°C)
0	85
10	70
20	55
30	40
40	?
50	25
60	25

(a) She missed out the temperature recording at the 40th minute. What could the temperature have been? [1]

_____ °C

(b) Based on the table above, what was likely the temperature of the room? [1]

_____ °C

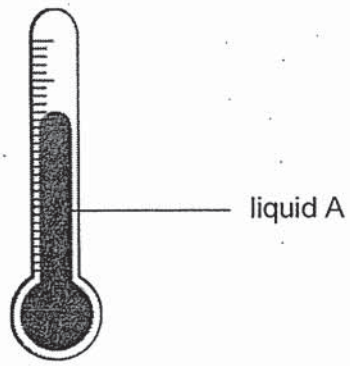
(c) Tick only <u>one</u> of the methods below that she could have used to cool the milk down to 25°C. [1]

Method	Tick (✓)
Add ice cubes to the milk	
Place the cup of milk under the hot sun	
Put the cup of milk in a beaker containing 85°C water	

Score	/ 3

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7 The diagram below shows a thermometer filled with Liquid A. Liquid A moves up or down to show the temperature of its surroundings.



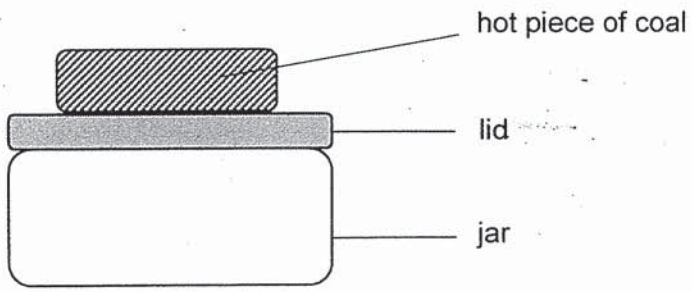
(a) Explain why liquid A in the thermometer drops when the thermometer is placed in a cup of ice. [1]

_____

_____

(b) Neal wants to open a jar. He places a hot piece of coal on the lid of the jar as shown in the diagram below.

(i) Draw an arrow in the diagram below to show the direction of heat flow between the hot piece of coal and the lid. [1]



(ii) How would the volume of the lid change when the hot coal is placed on it? Give a reason for your answer. [1]

_____

_____

Score	3

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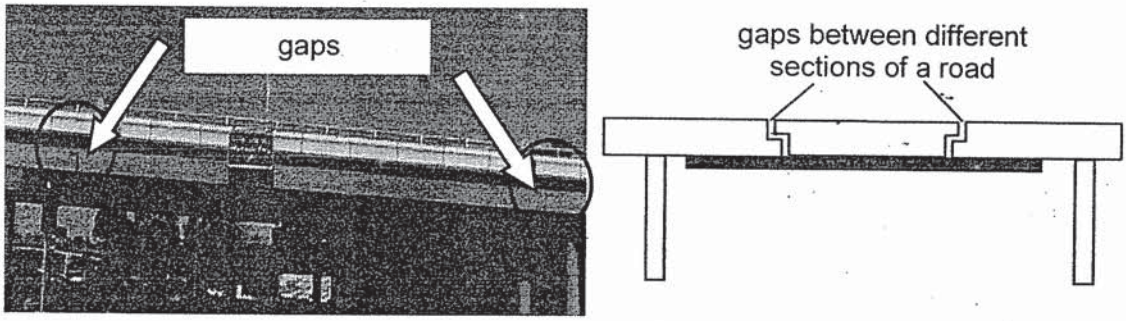
8 Kabir conducted an experiment by heating three similar rods made of different metals, P, Q and R for 10 minutes. He recorded the lengths of each rod before and after the heating in the table below.

Metal	Length (mm) before heating	Length (mm) after heating
P	100	104
Q	100	107
R	100	102

(a) What is the dependent (measured) variable in this experiment? [1]

(b) Based on the results of his experiment, what could Kabir conclude about the effect of heating **different** metals? [1]

(c) Kabir noticed that there are gaps between different sections of a highway road as shown below.



What would happen to the concrete road on a very hot day if there were no gaps? Explain your answer. [2]

End of paper

Score 4

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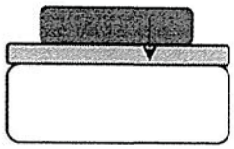
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NHPS Primary 4 Science 2020 Term 3 WA
ANSWER KEY

Section A

No.	
1.	**3**
2.	**2**
3.	**1**
4.	**1**
5.	**3**

Section B

No.	
6a	Any number $25 \leq x < 40$
6b	25
6c	Add ice cubes to the milk
7a	The liquid in the thermometer loses heat to the ice and contracts causing the liquid to drop.
7b(i)	
7b(ii)	The volume of the lid will increase. The lid will gain heat from the hot piece of coal and expand
8a	The length of different rods after heating (for 10 minutes)
8b	Different metals expand to different lengths after heating for the same period of time.
8c	Concrete road would gain heat from the (warmer/ hotter) surrounding (air/sun) and expand . As there is no space for the expansion, the concrete road will crack/buckle/break.

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