Rosyth School
Term Assessment 2023 (Term1)
SCIENCE
Primary 6

Name: _____ Total Marks: /22

Class: Pr 6- _____ Register No. _____

Date: 23 February 2023

Duration: Total time for Booklets A and B: 1 h

Booklet B

Instructions to Pupils:

1. Please do not turn this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Use a dark blue or black ballpoint pen to write your answers in the space provided for each question.
5. Do not use correction fluid/tape or highlighters.

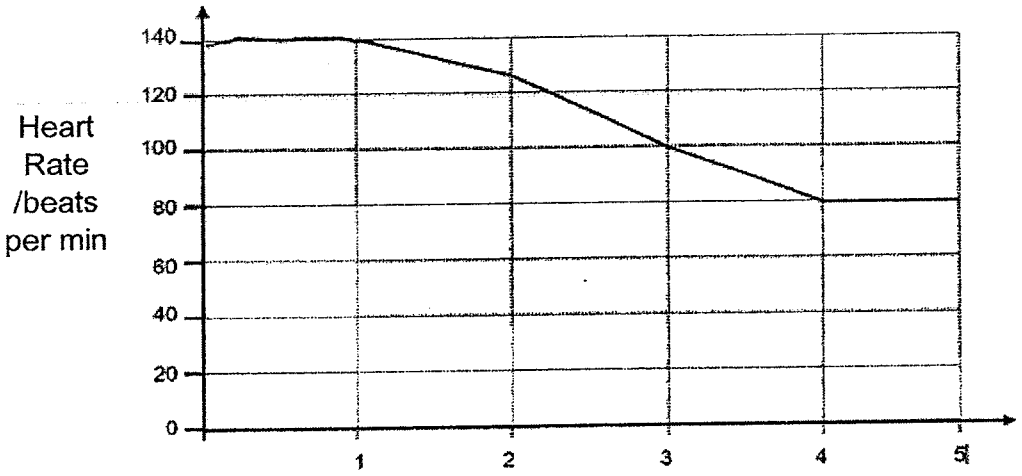
	Maximum	Marks Obtained
Booklet A	**28 marks**	
Booklet B	**22 marks**	
Total	**50 marks**	

* This booklet consists of 9 printed pages (including cover page).

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For questions 15 to 20, write your answers in the space provided. **(22 Marks)**

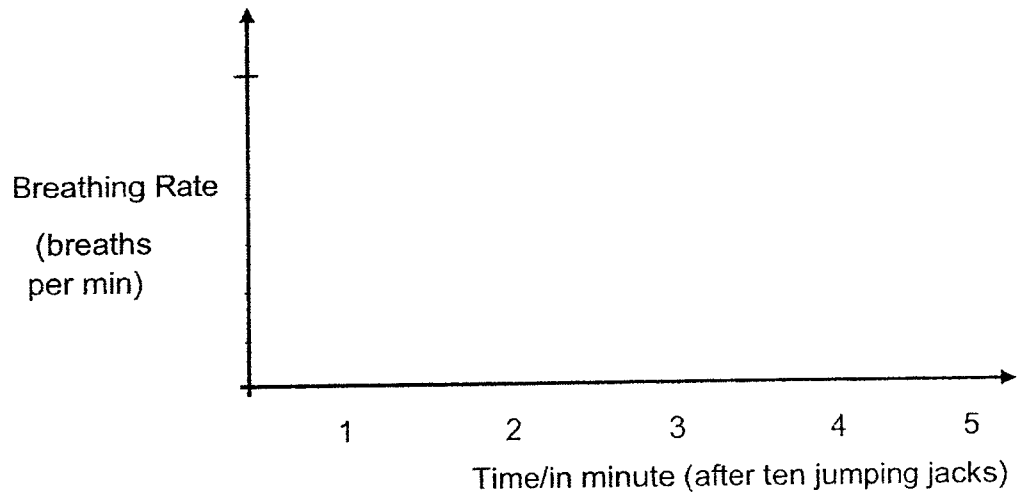
15 John carried out an investigation to find out the effect on his heart rate after ten jumping jacks. He measured his heart rate for five minutes after ten jumping jacks. The graph below shows the effect on his heart rate.



(a) From the graph, state John's heart rate at rest. [1]

_____

(b) On the axes below, draw a graph to show how his breathing rate will be affected after the ten jumping jacks. [1]



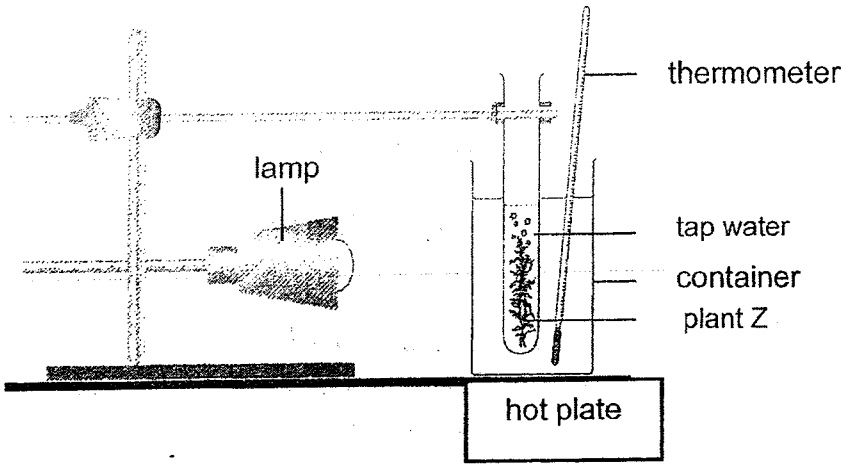
Question 15 is continued on page 3

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(c) How do our respiratory and circulatory systems work together to supply oxygen from the environment to our body? [2]

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16 Sheila wanted to find out how temperature of water affects the number of bubbles produced by plant Z in one minute. She set up the experiment as shown below in a dark room.



(a) Why did Sheila choose to conduct the experiment in a dark room? [1]

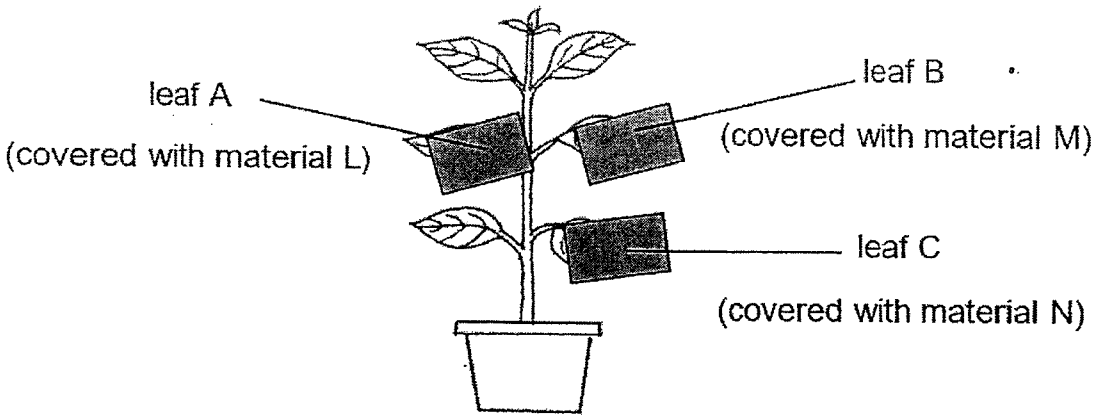
She collected the data and recorded her results in the table below.

Temperature of water /°C	20	30	40	50
Number of bubbles per minute	7	13	8	2

(b) What could she conclude from her results? [2]

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17 Beatrice placed a potted plant in a dark room for two days. After two days, three similar pieces of different materials, L, M and N were clipped onto the leaves, A, B, and C of the potted plant as shown below. The plant was watered and left in the open field for two days.



At the end of two days, Beatrice removed the three leaves, A, B and C, and measured the level of sugar in each leaf. The results of the sugar level are shown in the table below.

Leaf	Sugar level
A	Zero
B	High
C	Low

(a) State the degree of transparency of materials, M and N. [2]

Material	Transparency of material
M	
N	

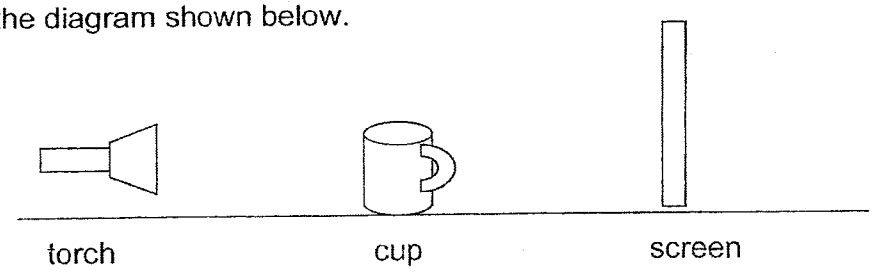
(b) Explain the result for leaf A. [2]

_____

_____

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18 Study the diagram shown below.



Mary carried out an investigation to find out how the distance of the torch from the screen affects the height of the shadow of the cup.

Her results are shown in the table below.

Distance of torch from the screen/cm	Height of the shadow on the screen/cm
30	6
25	8
20	10
15	12

(a) How is a shadow formed? [1]

_____

_____

(b) Using the results, state the relationship between the distance of the torch from the screen and the height of the shadow on the screen. [1]

_____

_____

(c) What can Mary do to increase the height of the cup's shadow without moving the position of the torch? [1]

_____

_____

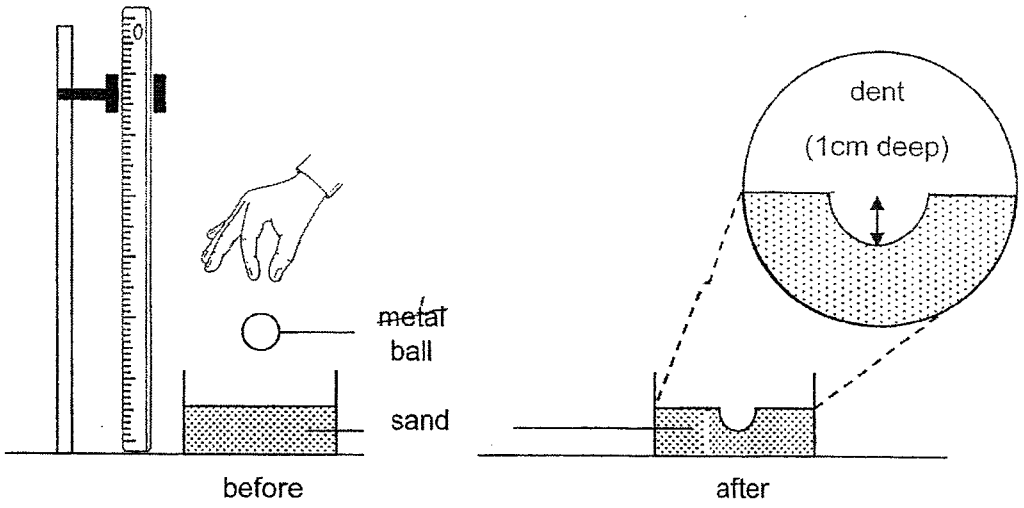
(d) What is the property of light shown by the above experiment? [1]

_____

_____

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19 John carried out an experiment using a ~~metal~~ ball as shown in the diagram below.



He released the ball from a height into a container of sand. The ball made a dent, which was 1cm deep, in the sand.

(a) If he released the same ball from a greater height, will the dent be deeper? Explain your answer. [2]

_____

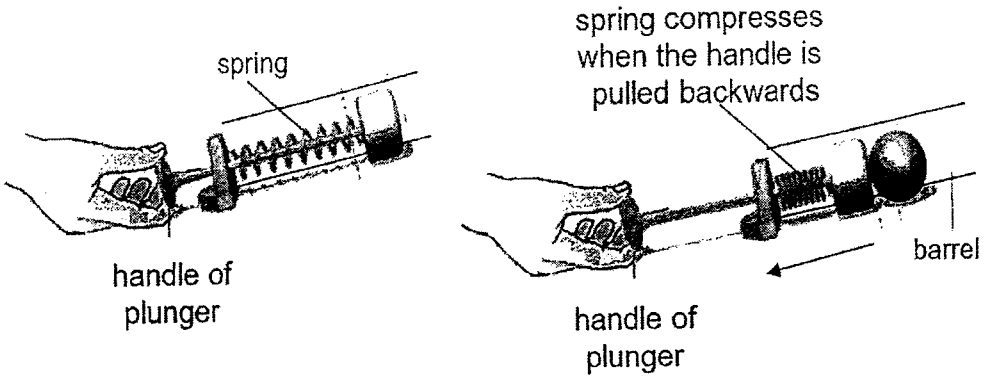
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(b) What will be the depth of the dent if John changed the iron ball to a copper ball of the same mass and released from the same height? [1]

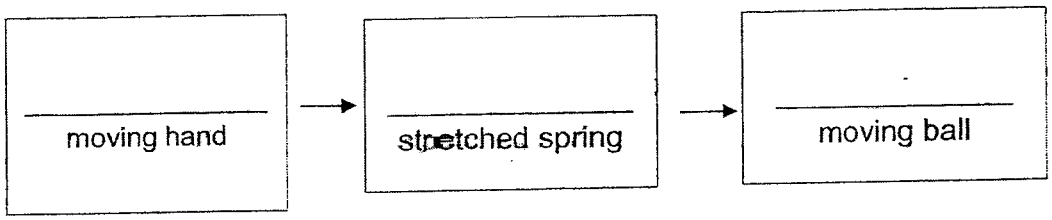
_____ cm

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20 The diagram shows a part in a set-up of a pinball game. When Ramesh pulled the handle of the plunger backwards and released it, the ball would be shot out from the barrel.



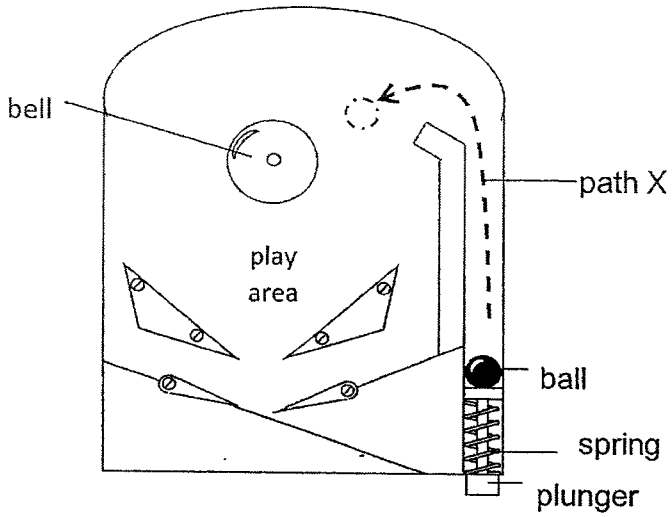
(a) Fill in the blanks below to show the energy conversion. [1]



Question 20 is continued on page 9

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The following diagram shows a standing pinball toy. The plunger is used to propel the ball into the play area.



When Ramesh pulled and released the plunger, the ball would follow path X as shown above and would be able to hit the bell and produce a 'ding' sound.

(b) Without replacing any part of the set-up, suggest one way that Ramesh can make the ball move a further distance. Explain your answer in terms of energy conversion. [2]

(c) After playing several times, the sound produced by the bell became softer than before even though Ramesh pulled the handle of the plunger backwards for the same distance.
What has happened to the spring? [1]

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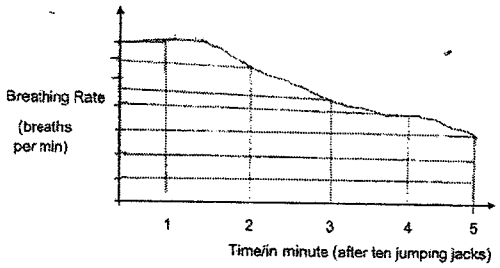
SCHOOL : ROSYTH PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : SCIENCE
TERM : WA1 2023

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	4	2	2	3	2	1	2	4	2
Q 11	Q12	Q13	Q14						
3	3	4	4						

Q15)

a)80 heart beats per minute

b)



c)Respiratory system takes in air and absorb oxygen into the bloodstream. Blood rich in oxygen is transported to the heart. The heart pumps the blood to the body parts.

Q16)

a) To ensure that the light comes from the lamp only.

b) When the temperature of water increased from 20°C to 309°C, the number bubbles produced increased, after which the number of bubbles produced per minute decreased when the temperature of water increased.

Q17)

a)M : Transparent

N : Translucent

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	b) Material L was opaque so no light could pass through for leaf A to photosynthesise, therefore there was no sugar in leaf A.
Q18)	a) Light travels in a straight line. When an object blocks the light source, a shadow is formed on the opposite side of the light source. b) As the distance of the torch from the screen decreases, the height of the shadow on the screen increases. c) She can move the cup closer to the torch. d) Light travels in a straight line.
Q19)	a) Yes it would. This is because the height of the object away from the ground affects the amount of gravitational potential energy there is. The more gravitational potential energy there is, the more kinetic energy it will be converted to. b) 1
Q20)	a) Kinetic energy →elastic potential energy →kinetic energy b) He can pull the plunger back more. This is so that more elastic potential energy can be produced to be converted to more kinetic energy for the ball to fly up higher. c) The spring lost its elasticity.

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