NAME:	TEAM:	CODE NUMBER:

Instructions:

1. Write your name, team and code number in the space provided on this Answer Booklet.
2. Write your answers in the space provided for each question in this Answer Booklet. The number of marks for each question is shown in brackets [ ].
3. Answer all the questions in English.
4. There are 8 printed pages in this Answer Booklet.

QUESTION 1

(a)	Any of the three [1]: - The walls are made of compacted snow which prevents cold winds from being blown in. - Compacted snow is a poor conductor of heat, thus reducing heat inside the igloo from being transferred. - White snow is a good reflector of radiation and is able to reflect heat inside the igloo.	[1]
(b)	The tourist is partly correct. [0.5] The fire inside will cause the interior surface of the snow to melt slightly. [0.25] However, melted snow refreezes into ice, forming an airtight insulating layer. [0.25]	[1]
		2

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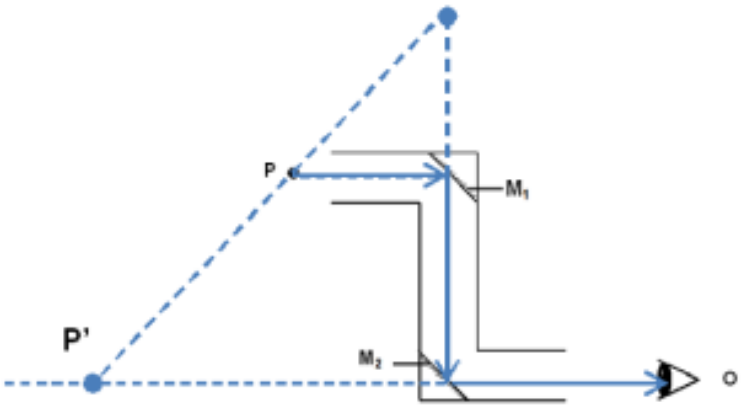
QUESTION 2

(a)	The oxygen inside the cylinder decreases to a very low amount [0.5], and since oxygen is required to support combustion [0.5], the flame goes off. Note: Oxygen is used up. [0]	[1]
(b)	When the flame goes off, temperature of gas/air inside the cylinder drops and pressure of gas/air inside the cylinder decreases and becomes lower than the atmospheric pressure outside [0.5]. The higher atmospheric pressure creates a net force [0.5] that pushes the water up the cylinder.	[1]
		2

QUESTION 3

(a)	Method 1:  Note: Ray diagram only [0.5] Method 2: Point P' should be behind mirror M_2 with a distance equal to the total distance of P to M_1 and M_1 to M_2. Note: Point only without distance [0]	[1]

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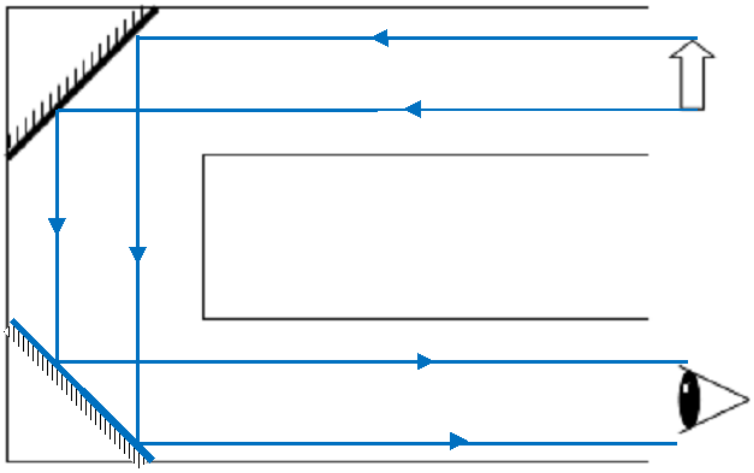
(b)	 Diagram is [0.5] The image or arrow will be inverted [0.5]	[1]
		2

QUESTION 4

(a)	18	[1]
(b)	20	[1]
		2

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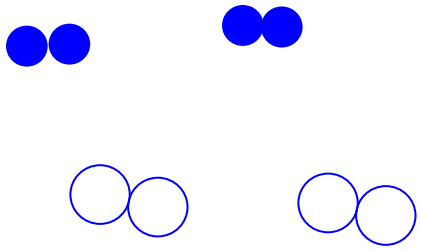
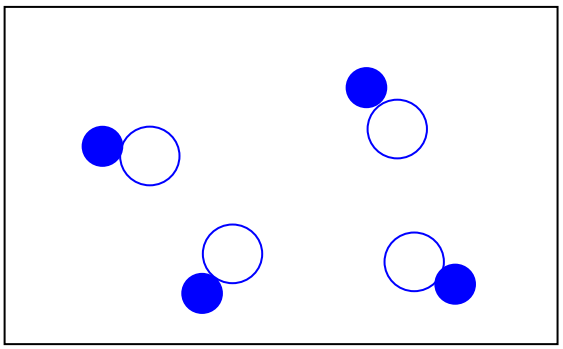
QUESTION 5

(a)	 Note: Molecules correct but wrong number. [0.5]	[1]
(b)	 Note: Molecules correct but wrong number. [0.5]	[1]
		2

QUESTION 6

(a)	B B A B	[1]
		1

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QUESTION 7

(a)	potential energy or elastic potential energy [1]	[1]
(b)	any of the two [1]: - The more the spring is turned, the longer the distance the toy car can travel. - The distance travelled by the car is directly proportional to the number of turns of the spring.	[1]
		2

QUESTION 8

(a)	X, W, Y, Z	[1]
(b)	(i) Producers: Z (ii) Primary Consumers: Y	[1]
		2

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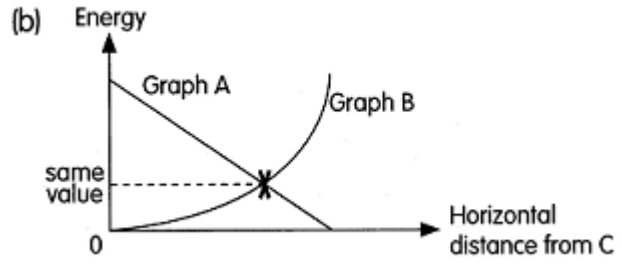
QUESTION 9

	New Reading: 24750 [2] Note: Total electrical energy consumer after 1 week = 392 kWh [1]	[2]
		2

QUESTION 10

(a)	Potential Energy: Graph A Kinetic Energy: Graph B	[1]
(b)		[1]
		2

QUESTION 11

(a)	Saliva or amylase [1]	[1]
(b)	Iodine test [1]	[1]
(c)	Set-up A: dark-blue color, Set-up B: no change in color or brown color, Set-up C: dark-blue color [1]	[1]
(d)	Iodine reacts with starch in potato cube to form a dark-blue color [0.5]. Since the enzyme is not active in cold and hot temperature, starch is not broken down and will react with iodine [0.5].	[1]
		4

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QUESTION 12

(a)	Any of the two [1]: - Laying eggs on the underside of a leaf makes the eggs less easily seen by the predators. - The leaf protects the eggs from the harsh environment (e.g. sunlight, wind, rain). Note: The leaf protects the eggs. [0.5]	[1]
(b)	The tadpoles live in water. By laying egg above the pond, the tadpole is able to drop into the water when the egg hatches.	[1]
		2

QUESTION 13

(a)	Any of the two [1]: - The dried leaves are biodegradable and they started to decompose after a few weeks. - The dried leaves decayed.	[1]
(b)	To provide natural decomposers such as bacteria to speed up the decomposition of the dried leaves.	[1]
(c)	Farmers can use the compost as fertilizers.	[1]
		3

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QUESTION 14		
(a)	When the switch is closed, there is an electric current flowing in the coil [0.5]. The steel rod becomes a temporary magnet and attracts the metal striker [0.5].	[1]
(b)	Any of the three: [Chemical + Electrical = 0.5] - Chemical → Electrical → Kinetic - Chemical → Electrical → Potential → Kinetic - Chemical → Electrical → Mechanical Note: Chemical → Electrical → Potential [0.5]	[1]
		2
	End of Paper	30