NAME:	CLASS:	INDEX NO:

QUEENSWAY SECONDARY SCHOOL

PRELIMINARY EXAMINATION 2018

SECONDARY 4 EXPRESS/5 NORMAL (ACADEMIC)

Parent's Signature:

SCIENCE (PHYSICS, CHEMISTRY) **5076/01**

Paper 1 Multiple Choice **14 Sep 2018**

1 hour

Additional Materials: Multiple Choice Answer Sheet

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.
Do not use staples, paper clips, glue or correction fluid.
Write your name and index number on the Answer Sheet in the spaces provided.

There are **forty** questions on this paper. Answer **all** questions. For each question, there are four possible answers, **A**, **B**, **C** and **D**.
Choose the **one** you consider correct and record your choice in **soft pencil** on the separate Answer Sheet.

Read the instructions on the Answer Sheet very carefully.

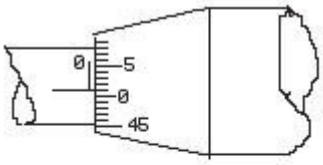
Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.
A copy of the Periodic Table is printed on page 16.
The use of an approved scientific calculator is expected, where appropriate.

This document consists of **10** printed pages.

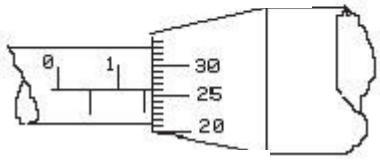
Setters: Mr Jimmy Ong, Mr Enrico Tan (Phy) **[Turn over**

Downloaded from SingaKids.com

1 A micrometer screw gauge is used to measure the diameter of a pearl



without pearl



with pearl

What is the diameter of the pearl?

A 1.25 mm

B 1.75 mm

C 1.76 mm

D 2.25 mm

2 Which of the following shows the closest estimate for the height of a 25-storey HDB flat?

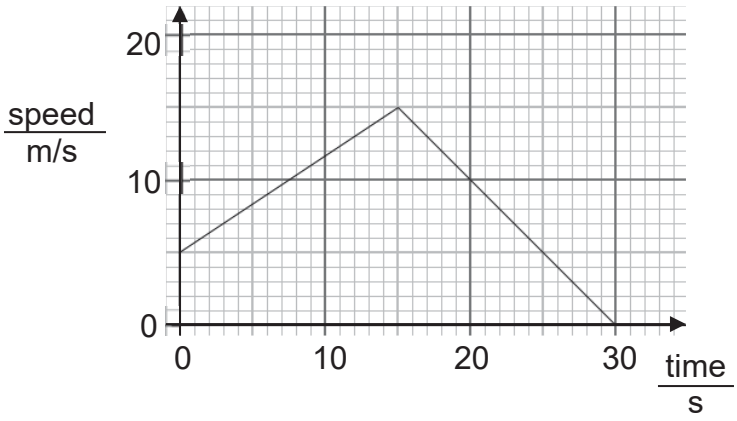
A 0.1 dm

B 10 km

C 100 Gm

D 10 000 cm

3 The graph shows the movement of a bicycle over a period of 30 s.



What is the average speed of the bicycle for the first 15 s?

A 0.5 m/s

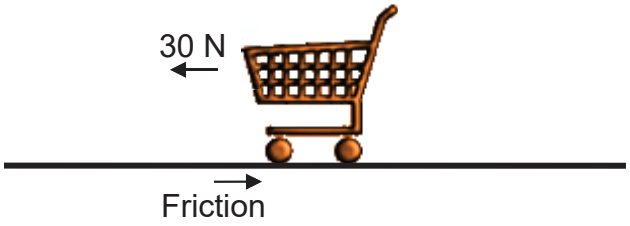
B 3.75 m/s

C 7.5 m/s

D 10 m/s

Downloaded from SingaKids.com

4 A trolley of mass 10 kg was pushed with a force of 30 N. If it moves with a constant speed of 0.5 m/s, what is the force of friction acting on the trolley?



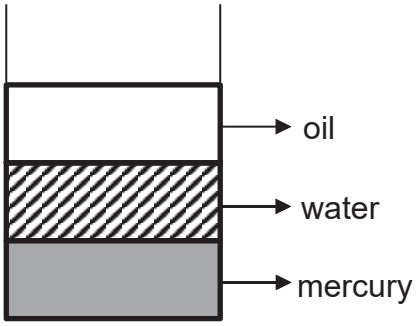
A 0 N

B 15 N

C 25 N

D 30 N

5 The following diagram shows the position of mercury, oil and water in a clear glass container.



Which of the following lists is arranged in ascending order of density?

A water, mercury, oil

B mercury, water, oil

C oil, water, mercury

D oil, mercury, water

6 Which of the following are typical characteristics of an unstable object?

	base	**center of gravity**
A	narrow	high
B	narrow	low
C	wide	high
D	wide	low

Downloaded from SingaKids.com

7 Gavin is attempting to cross a frozen lake which is covered with only a very thin layer of ice on the surface. Which of the following is the **best** method to cross the lake without cracking the ice?

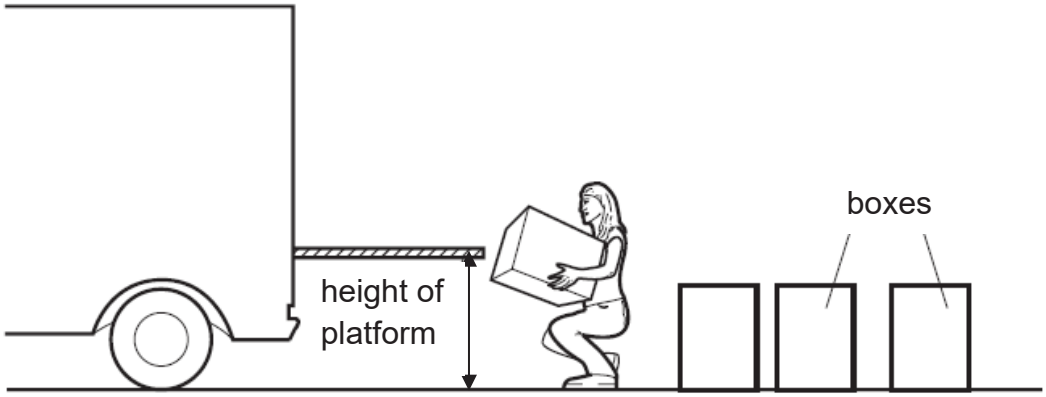
A tip-toe lightly and slowly across the surface

B run as fast as he can across the surface before it cracks

C lie flat on the thin ice and push himself across the surface

D remove all unnecessary heavy objects and walk normally across the surface

8 A person lifts boxes of equal weight onto a platform.



Which quantity will not affect the total work done by the person?

A the weight of the boxes

B the number of boxes lifted

C the time taken to lift the boxes

D the height of the platform above the ground

9 Substance X has a melting point of −98 °C and a boiling point of 65 °C.

Which statement best describes the motion and arrangement of the particles of substance X at a temperature of 0 °C

A They vibrate about their fixed positions.

B They slide past one another at high speeds.

C They move freely and randomly at high speeds.

D They slide pass one another and have no fixed positions.

Downloaded from SingaKids.com

10 A piece of ice cube feels cool to the skin when touched.

Which of the following best explains why?

A Heat is transferred from the skin to the ice cube.

B Heat is transferred from the ice cube to the skin.

C Coldness is transferred from the ice cube to the skin.

D Coldness is transferred from the skin to the ice cube.

11 Boiling and evaporation are different processes.

Which of the following shows their differences accurately?

	Boiling	Evaporation
A	No bubbles are formed	Bubbles are formed
B	Occurs throughout the liquid	Only occurs at the surface
C	Occurs at 100 °C	Occurs at any temperature
D	Requires energy source	Requires heat source

12 What is meant by the term *wavefront*?

A half the distance between crest and the trough

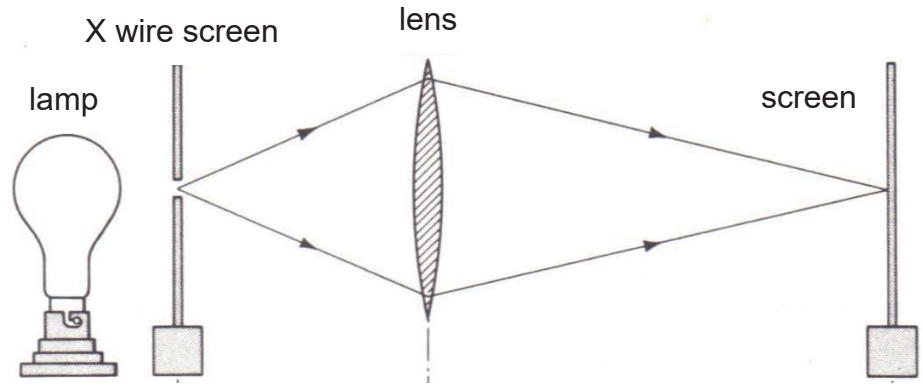
B a line joining the points of the same phase on a wave

C the distance between two successive crests of a wave

D the time taken to complete a full oscillation of the wave

Downloaded from SingaKids.com

13 A lamp produces a sharp image of an X wire on a screen through a thin converging lens



.

How does the image change as the lens is moved closer to the lamp?

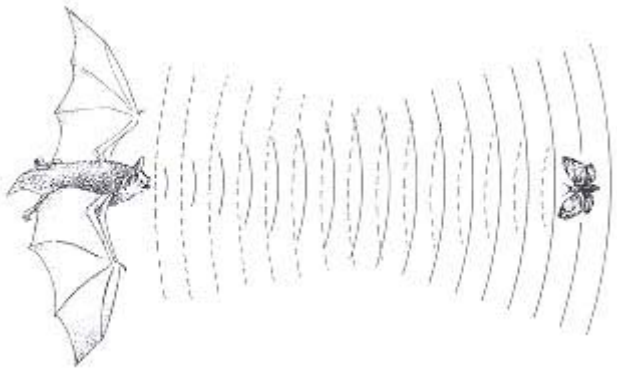
A The image becomes virtual.

B The image becomes brighter.

C The image on the screen becomes blurred.

D The image on the screen becomes more focussed.

14 Bats use echolocation to locate their prey. A bat hears the echo that bounced off the moth 2.2 ms after it emits its call.



Assuming the speed of sound is 330 m/s, what is the distance between the bat and the moth?

A 75 mm

B 150 mm

C 363 mm

D 726 mm

Downloaded from SingaKids.com

15 Which of the following is the SI units for charge?

A Ampere

B Coulomb

C Joules

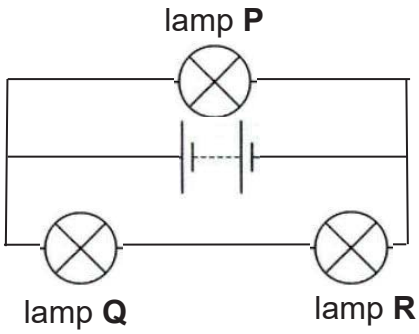
D Watts

16 The potential difference across a bulb is 12 V and 100 C of charge flows through it.

Calculate the amount of light and thermal energy dissipated by the bulb.

A 0.12 J
B 8.33 J
C 120 J
D 1200 J

17 The diagram shows three identical lamps **P**, **Q** and **R** connected in a circuit.



Which row shows how the brightness of lamp **P** and **Q** will change if lamp **R** is removed?

	brightness in lamp P	brightness in lamp Q
A	no change	dimmer
B	no change	brighter
C	dimmer	brighter
D	brighter	dimmer

Downloaded from SingaKids.com

18 The switch of a fan is connected incorrectly along the neutral wire.

Which of the following statements about the operation of the fan is/are correct?

I. The fan would still operate when the switch is closed.
II. The fuse of the fan would melt under normal working condition when the switch is closed.
III. The fan would still be connected to the high voltage source when the switch is opened.

A I only
B III only
C I and II only
D I and III only

19 Two bar magnets are placed near each other with their poles as shown.

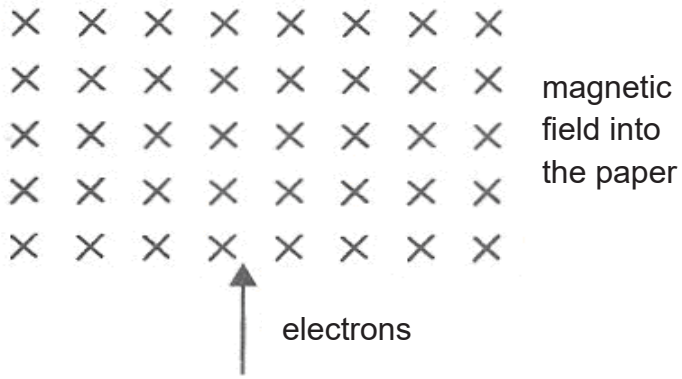
A student plots the resultant field lines with a compass.
The Earth's magnetic field can be ignored.

At which point does the compass point towards the top of the page?



Downloaded from SingaKids.com

20 An electron beam is directed into a uniform magnetic field. The magnetic field lines are flowing into the paper.



How would the electron beam be affected?

A It will deflect out of the paper.

B It will deflect to the left.

C It will deflect to the right.

D It will slow down but will not change direction.

END OF PAPER

Downloaded from SingaKids.com

The Periodic Table of the Elements

Group																	
I	II										III	IV	V	VI	VII	0
						1 H hydrogen 1										4 He helium 2
7 Li lithium 3	9 Be beryllium 4										11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12										27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	64 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	– Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La lanthanum 57 *	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	– Po polonium 84	– At astatine 85	– Rn radon 86
– Fr francium 87	– Ra radium 88	– Ac actinium 89 †															

*58-71 Lanthanoid series

†90-103 Actinoid series

140 Ce cerium 58	141 Pr praseodymium 59	144 Nd neodymium 60	– Pm promethium 61	150 Sm samarium 62	152 Eu europium 63	157 Gd gadolinium 64	159 Tb terbium 65	162 Dy dysprosium 66	165 Ho holmium 67	167 Er erbium 68	169 Tm thulium 69	173 Yb ytterbium 70	175 Lu lutetium 71
232 Th thorium 90	– Pa protactinium 91	238 U uranium 92	– Np neptunium 93	– Pu plutonium 94	– Am americium 95	– Cm curium 96	– Bk berkelium 97	– Cf californium 98	– Es einsteinium 99	– Fm fermium 100	– Md mendelevium 101	– No nobelium 102	– Lr lawrencium 103

Key: a / X / b

a = relative atomic mass

X = atomic symbol

b = proton (atomic) number

The volume of one mole of any gas is 24 dm^3 at room temperature and pressure (r.t.p.).

www.KiasuExamPaper.com
264
Downloaded from SingaKids.com

NAME:	CLASS:	INDEX NO:

QUEENSWAY SECONDARY SCHOOL

PRELIMINARY EXAMINATION 2018

SECONDARY 4 EXPRESS / 5 NORMAL (ACADEMIC)

Parent's Signature:

SCIENCE (PHYSICS, CHEMISTRY) 5076/02

Paper 2 Physics **11 Sep 2018**

1 hour 15 minutes

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your name and index number on all the work you hand in.
You may use an HB pencil for any diagrams, graphs, tables or rough working.
Write in dark blue or black pen.
Do not use staples, paper clips, glue or correction fluid.

The use of an approved scientific calculator is expected, where appropriate.
You may lose marks if you do not show your working or if you do not use appropriate units.

Section A:
Answer **all** questions.
Write your answers in the spaces provided on the question paper.

Section B:
Answer any **two** questions.
Write your answers in the spaces provided on the question paper.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
Section A	/45
Q	/10
Q	/10
TOTAL	/65

This document consists of **16** printed pages.

Setters: Mr Jimmy Ong, Mr Enrico Tan (Phy) **[Turn over**

Downloaded from SingaKids.com

SECTION A

Answer **all** the questions in the spaces provided.
The total mark for this section is 45.

A1 Fig. 1 shows how the speed of a bicycle changes with time.

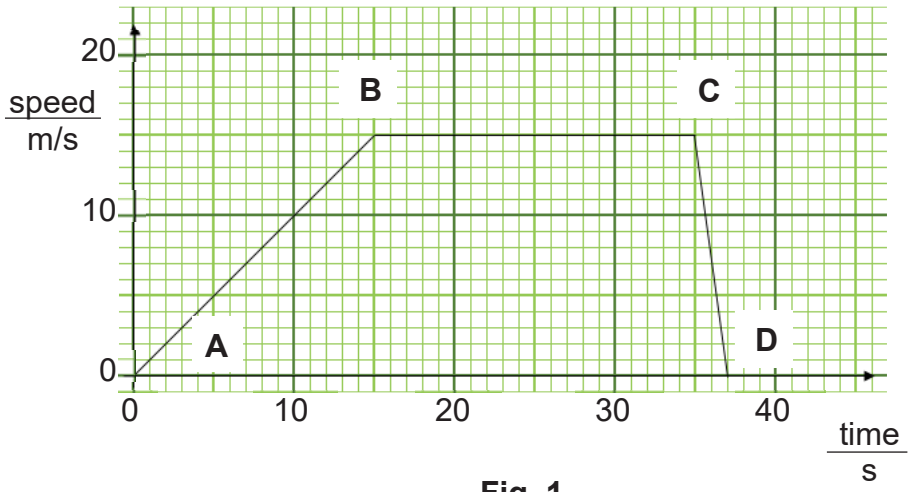


Fig. 1

(a) State the magnitude of the acceleration of the object between points **B** and **C**.

acceleration = ... m/s^2 [1]

(b) Use your answer to **(a)** to describe the motion of the bicycle between points **B** and **C**.

.....[1]

(c) Calculate, showing your working, the distance travelled by the bicycle between points **A** and **B**.

distance travelled = ... m [1]

(d) Is it possible to tell the direction of the bicycle using the Fig. 1? If so, state the time period at which the bicycle is travelling in the reverse direction. If not, state the reason why it is not possible.

.....

.....[2]

Downloaded from SingaKids.com

A2 Fig. 2.1 shows a ball falling a distance of 1.1 m when David drops it. The mass of the ball is 0.50 kg.
Ignore air resistance. The gravitational field strength is 10 N/kg.

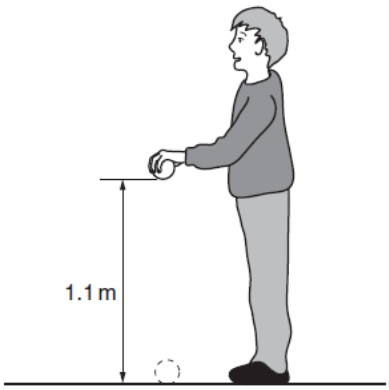


Fig. 2.1

(a) Calculate the decrease in gravitational potential energy of the ball as it falls through the 1.1 m.

decrease in potential energy = ... J [1]

(b) The ball bounces and only rises to a height of 0.80 m.

(i) Calculate the energy lost during the bounce.

energy lost = ... J [2]

(ii) Suggest one reason why energy is lost during the bounce.

.....[1]

(c) After retrieving the ball, David throws the ball down from a height of 1.1 m with an initial kinetic energy of 9.0 J.
Calculate the speed of the ball when it hits the ground.

speed = ... m/s [2]

Downloaded from SingaKids.com

A3 Fig. 3.1 shows a pressure cooker with a safety valve.

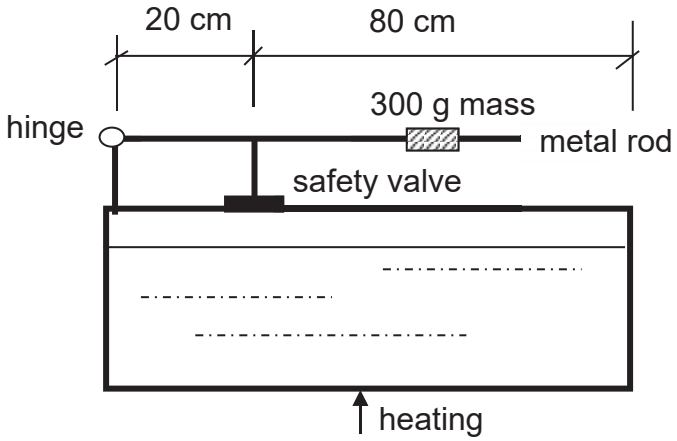


Fig. 3.1

(a) Calculate the weight of the mass. Take g = 10 N/kg.

weight = ... N [1]

(b) The safety valve is designed to open when the pressure in the cooker is 2500 Pa. The area of the valve is 0.003 m^2.

(i) Calculate the force applied on the safety valve due to the pressure in the cooker.

force = ... N [2]

(ii) Taking moments about the hinge of the pressure cooker, determine the shortest distance the weight should be positioned from the hinge such that the safety valve remains closed.

distance = ... cm [2]

Downloaded from SingaKids.com

A4 Two cars are parked next to each other in a hot, sunny afternoon as shown in Fig. 4.1.

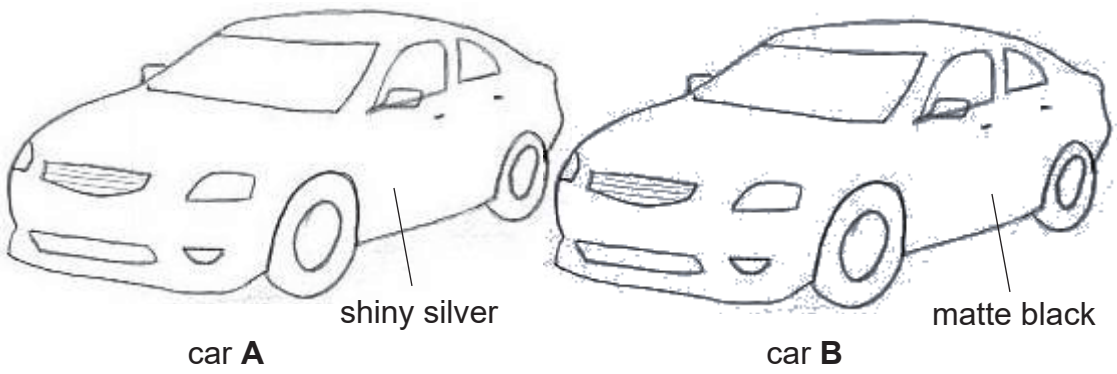


Fig. 4.1

The cars are identical except that car **A** has a polished silver surface and car **B** has a matte (dull) black surface.

The rise in temperature of car **B** over time is shown in Fig. 4.2.

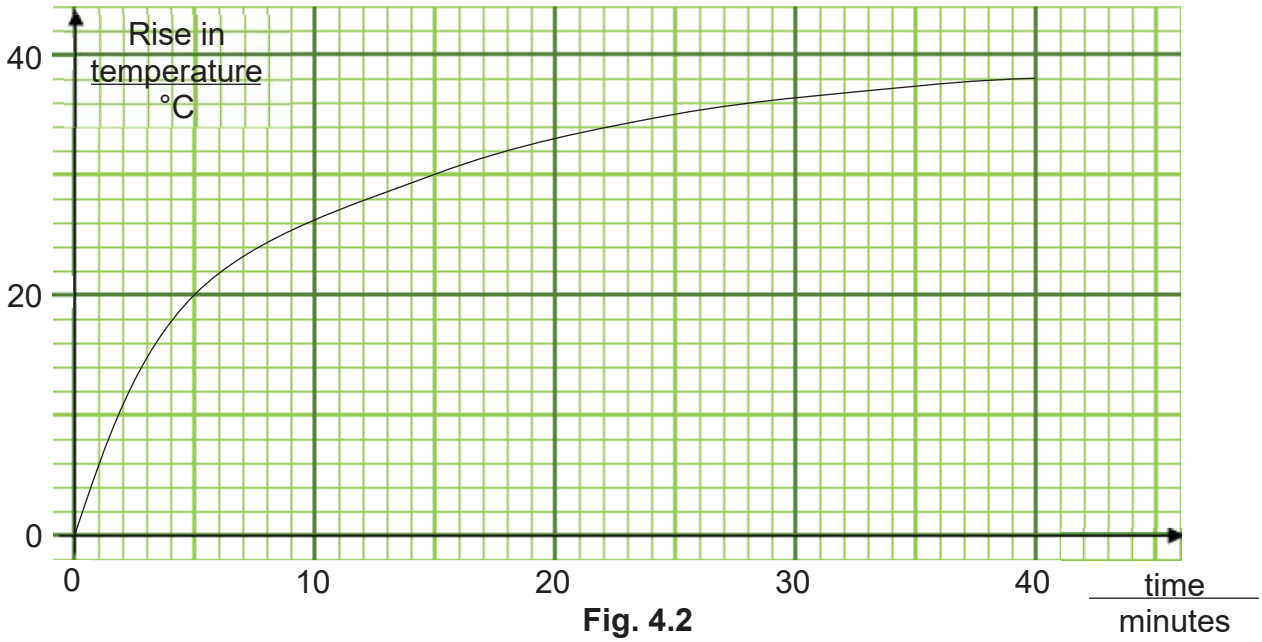


Fig. 4.2

(a) On Fig. 4.2, sketch the variation with time of the rise in temperature of car **A** for time between 0 and 20 minutes. [2]

(b) The two words “shiny” and “silver” describe car **A**’s reflectiveness of light and colour respectively. State one more property that affects absorption and emission of radiant heat.

..... [1]

Downloaded from SingaKids.com

A5 Fig. 5.1 shows how the pressure changes with time, at a sound receiver, for a sound wave. Point A is at an instant where the pressure is the highest. Fig. 5.2 shows position of air particles in the sound wave as it passes through.

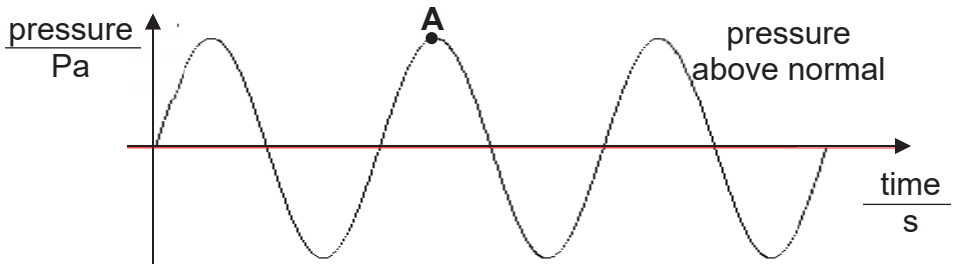


Fig. 5.1



Fig. 5.2

(a) Sound is type of wave.
Describe the behaviour of sound waves that make it a "wave" making reference to its energy transfer and particles.

……

…… [2]

(b) The sound wave has a frequency of 432 Hz.

State the meaning of "frequency of 432 Hz" in the context of a sound wave.

…… [1]

(c) Calculate the speed of this sound wave.

speed = ... m/s [2]

(d) On Fig. 5.2, circle a region on the wave where it corresponds to the pressure at point **A**. [1]

(e) A sound wave with a high maximum pressure corresponds to a high amplitude in the sound wave.

State how a sound with high amplitude affects the type of sound heard.

…… [1]

Downloaded from SingaKids.com

A6 A parallel beam of light shines on the surface of a glass block.

(a) Glass has a higher refractive index than air.

State the effect on the speed of light as light travels from a medium of lower refractive index to a medium of higher refractive index.

.....[1]

(b) The beam of light hits the surface of the glass at an angle of 35° to the surface of the glass as shown in Fig. 6.1.

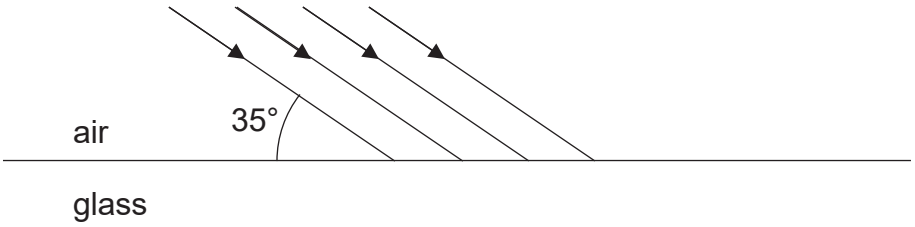


Fig. 6.1

Parallel rays of light strike the surface of the glass block from directly above it.

(i) Calculate the angle of refraction, given that the refractive index of glass is 1.5. Round your answer to the nearest 1°.

angle of refraction = ... °[3]

(ii) Hence, complete the diagram on Fig. 6.1 to show the path of the light in the glass. [1]

Downloaded from SingaKids.com

A7 Fig. 7 shows regions of the electromagnetic spectrum in order of decreasing frequency. Some regions are identified by letters.

high frequency → low frequency

A	**B**	ultraviolet	visible light	infrared	microwave	**C**

Fig. 7

(a) **(i)** State one property of waves in regions **A** and **C** that is common among waves in both regions.

.....[1]

(ii) State how waves in region **A** are different from that of waves in region **C** (other than having higher frequencies).

.....[1]

(b) For each device, state which component of the electromagnetic spectrum is used.

sunbed .....

cooking .....[2]

Downloaded from SingaKids.com

A8 Fig. 8 shows the electric field pattern between two isolated point charges. The direction of the field and the polarity of the charges are unknown.

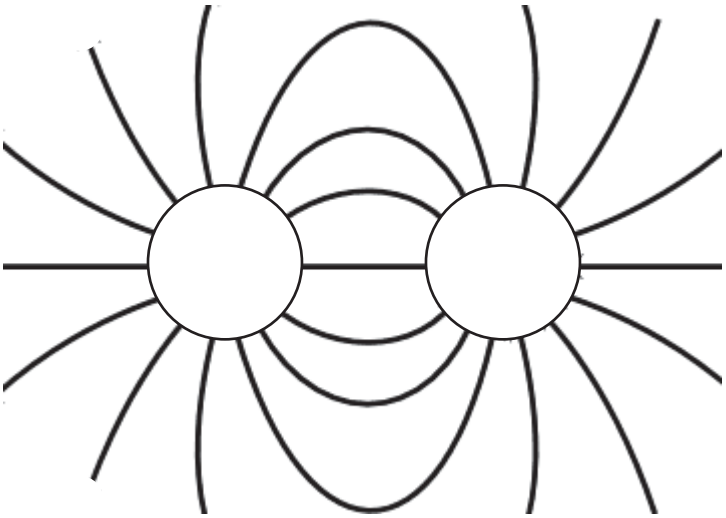


Fig. 8

(a) On Fig. 8,

(i) Label the possible polarities for both charges with a "+" and/or a "–" in the point charges. [1]

(ii) Using your answer to **(a)(i)**, draw the directions of the electric field lines. [1]

(b) The magnitude of the electrical charge for both point charges increases.

State two ways in which the electric field pattern would change.

……...…

……..... [2]

Downloaded from SingaKids.com

A9 Fig. 9.1 shows how the current in the filament of a lamp depends on the potential difference across it.

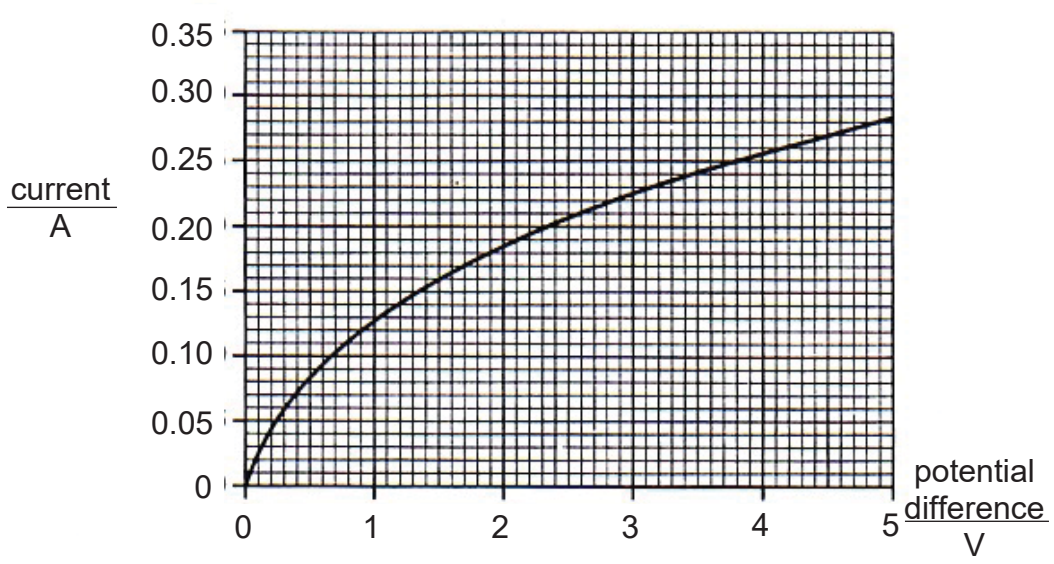


Fig. 9.1

(a) Calculate the resistance of the filament when the current is 0.25 A.

resistance = ... Ω [2]

(b) Explain how Fig. 9.1 shows that the resistance of the filament increases with temperature rise.

……..……...

……..... [1]

The lamp in Fig. 9.1 is connected in a circuit shown in Fig. 9.2.

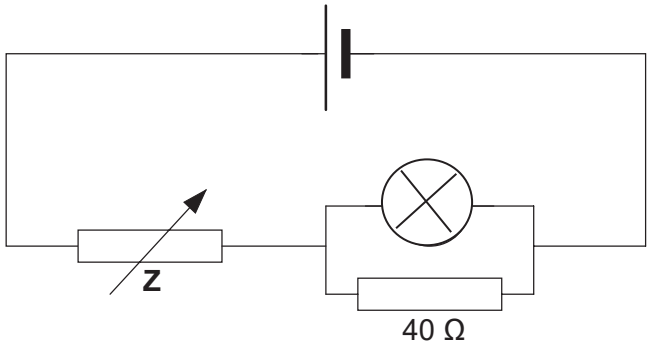


Fig. 9.2

Downloaded from SingaKids.com

The current in the lamp is maintained at 0.25 A. Determine

(i) the potential difference across the 40 Ω resistor,

potential difference = ...V [1]

(ii) the current in the 40 Ω resistor,

current = ... A [2]

Downloaded from SingaKids.com

SECTION B

Answer any **two** questions in this section.
Write your answers in the spaces provided.

B10 Fig 10.1 shows a Bunsen burner. Three spots are marked showing possible spots to place a spoon to be heated by the flame. An ice cube is placed on the spoon.

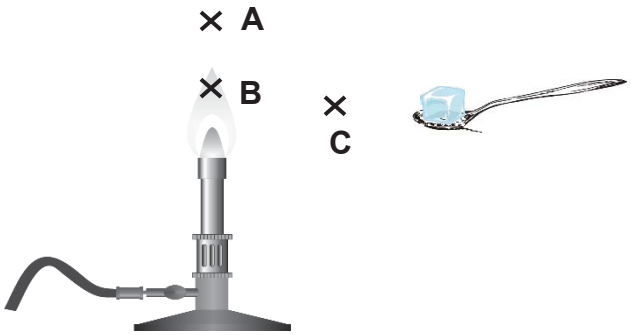


Fig. 10.1

(a) State the **main** process of transfer of thermal energy from the fire to the spoon when placed at :

point **A** : ……

point **B** : ……

point **C** : ……[3]

(b) Fig. 10.2 shows the heating curve of the ice cube when placed at point **B**.

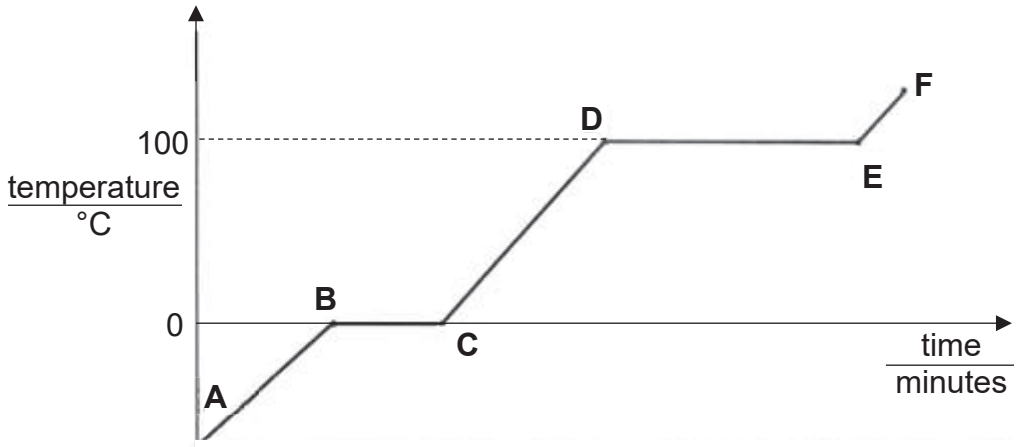


Fig. 10.2

(i) Explain, in detail, why the temperature of the ice cube remains constant between points **B** and **C** even though thermal energy is still being supplied to the ice cube.

……

……

…… [3]

Downloaded from SingaKids.com

(ii) Describe the changes, if any, to the arrangement and to the motion of the molecules of water as it heats up from point **C** to point **D**.

……

…….…….... [2]

(c) **(i)** The water loses some mass even before it reaches 100°C. Assuming there was no spillage, state a reason for this loss.

…….…….... [1]

(ii) Explain why the reason you have mentioned in **(c)(i)** can happen before the water reaches boiling point.

……..……

……..…[1]

Downloaded from SingaKids.com

A11 **(a)** Two cylindrical iron rods, **A** and **B** are placed inside a solenoid that has a cross section in the shape of a circle as shown in Fig. 11.1. The solenoid is connected to a battery and a switch (not shown).

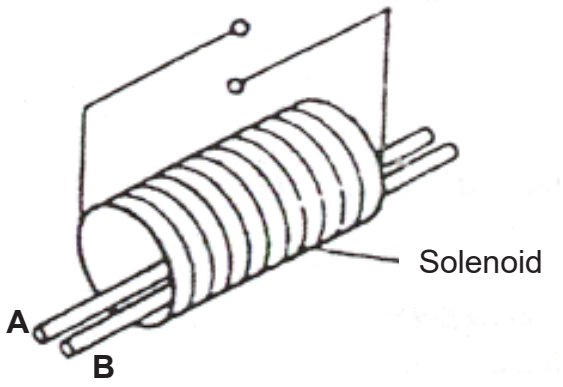


Fig. 11.1

(i) Describe and explain the observations on the iron rods when the switch is closed.

……

……

…… [2]

(ii) Describe and explain the observations on the iron rods when the switch is opened.

……

……

…… [2]

Downloaded from SingaKids.com

(b) Fig. 12.2 shows a rectangular metallic coil **ABCD** carrying a current that is placed in a magnetic field. BC is 2 cm long.

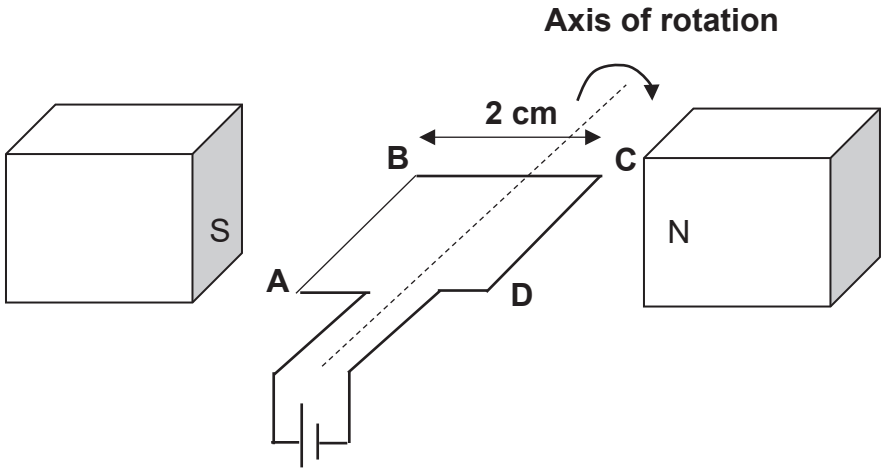


Fig. 12.2

(i) Describe and explain the observations on the iron rods when the switch is closed.

……

……

…… [2]

(ii) On Fig. 12.2, draw the force that is acting on

1. Section **AB**;
2. Section **CD**. [1]

(iii) Assuming the force acting on each section is 2 N, calculate the total moment generated on the coil ABCD.

Moment = ... Ncm [2]

(iv) The north and south pole positions are swapped. Describe how the forces acting on section **AB** and **CD** respectively will change, if any.

…… [1]

(v) State one way to increase the magnitude of the force acting on section **AB** of the coil.

…… [1]

Downloaded from SingaKids.com

A12 An electric kettle with power rating of 2.5 kW is connected to a 240 V mains supply by a flexible cable to a 3-pin plug.

State the names of the 3 wires found in the 3-pin plug and their respective colours in Table 12.1 [3]

Name of wire	Colour

Table 12.1

(a) Calculate the current flowing in the circuit when the electric kettle is operating under normal condition.

current = ... A [2]

(b) Suggest a suitable fuse rating for this circuit. Explain your answer.

……

…….. [2]

(c) If the cost of electricity is $0.23 per kWh, calculate the total cost of using the electric kettle for 1 hour every day for 1 week.

cost = $..... [2]

(d) Suggest where a heating element should be placed in the electric kettle so that the water can be heated efficiently.

……

…….. [1]

END OF PAPER

Downloaded from SingaKids.com

Downloaded from SingaKids.com

QUEENSWAY SECONDARY SCHOOL
Sec 4E5N Prelim Answers 2018

MCQ

1	B
2	D
3	D
4	D
5	C
6	A
7	D
8	C
9	D
10	A
11	B
12	B
13	C
14	C
15	D
16	D
17	B
18	D
19	A
20	B

Section A

1a	The bicycle is travelling at constant speed from B to C then decelerates constantly to rest from C to D.	1 1
1b	Distance travelled $= \frac{1}{2} \times ((35 - 15) + 37) \times 15$ $= 427.5$ m $= 428$ m (3 s.f.)	1 1
1c	Average speed $= \frac{427.5m}{37s}$ $= 11.6$ m/s (3 s.f.)	1

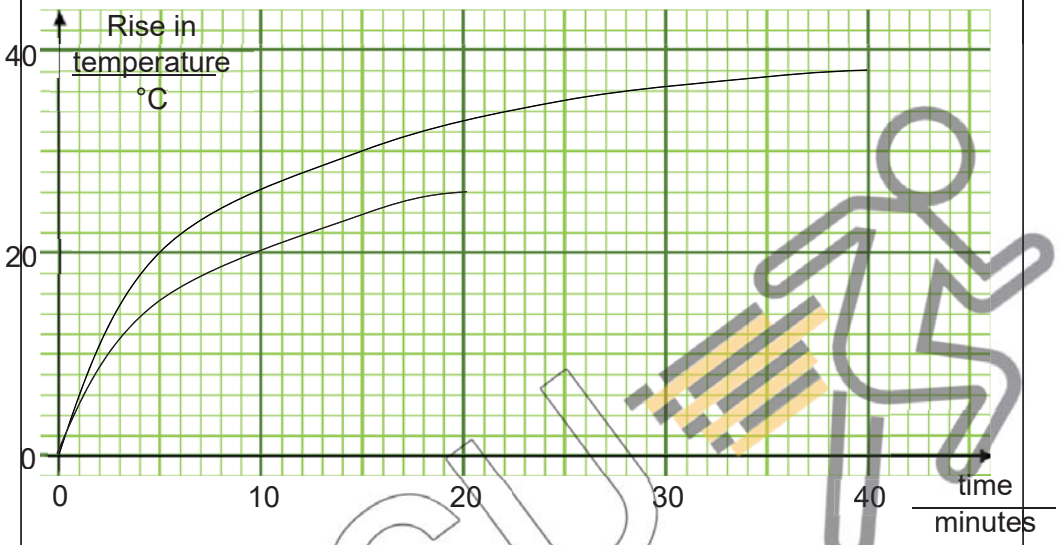
2a	loss in p.e. = 0.5 × 10 × 1.1 = 5.5 J	1
2bi	5.5 – (0.5 x 10 x 0.8) = 1.5 J	1 1
2bii	energy lost as thermal/sound	1
2c	5.5 + 9 = ½(0.5)v^2 v = 7.62 m/s	1 1

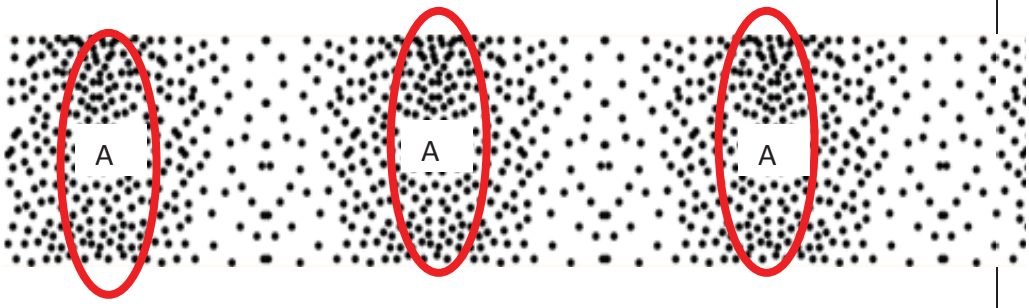
3a	Weight = 0.3 x 10 = 3 N	1

KiaSU ExamPaper

Downloaded from SingaKids.com

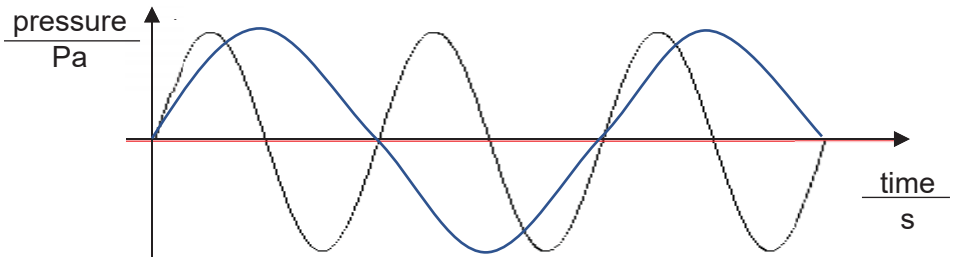
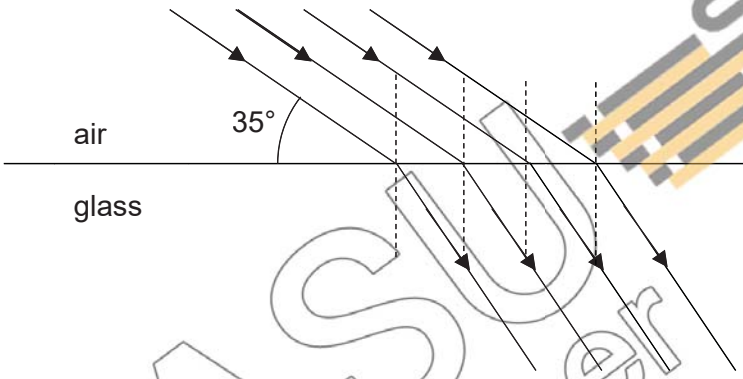
3bi	F = 2 500 x 0.003 = 7.5 N	1 1
3bii	ACWM = CWM 7.5 x 20 = 3 x d d = 50 cm from hinge	1
3biii	Force applied at safety valve will be higher. The weight should be moved further/ to the right.	1

4a	 Drawn graph must be below the given graph Drawn graph must have a similar shape to the given graph.	 1 1
4b	Surface temperature or surface area.	1

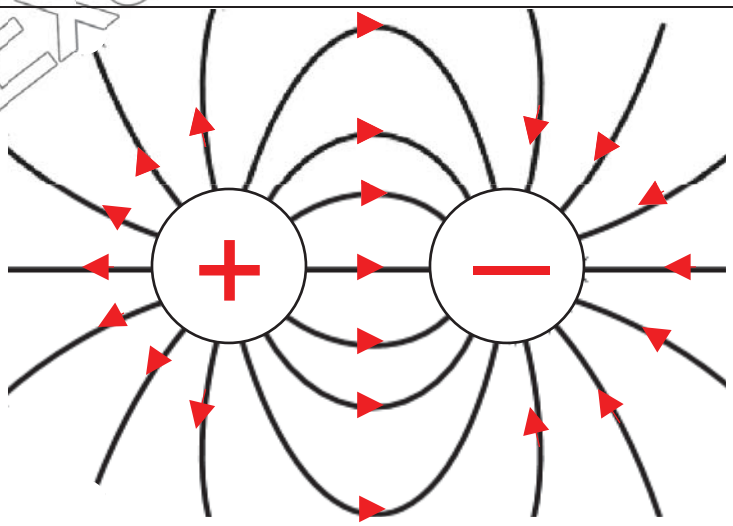
5a	Sound energy is transferred from particle to particle as the particles vibrate to and fro. They collide against each other, transferring the energy from one particle to the next.	1 1
5b	It means 432 oscillations of the sound wave is produced in one second.	1
5c	v=fλ v=432 × 0.76 =328.32 m/s =328 m/s (3 s.f.)	 1 1
5d	 Any one correct region circled	 1

KiasuExamPaper

www.KiasuExamPaper.com
283
Downloaded from SingaKids.com

5e	 Same amplitude but twice the period.	1
6a	Speed of light decreases.	1
6b	$1.5 = \frac{\sin(90°-35°)}{\sin r}$ $r = sin^{-1}(\frac{\sin(55°)}{1.5})$ $r = 33°$ (nearest degree)	1 1 1
6c	 All lines drawn correctly at 33° ±1°	1

7ai	Waves in both regions have a speed of 3.0×10^8 m/s.	1
7aii	Waves in region A have a shorter wavelength.	1
7b	sun tanning : ultraviolet barbecue : infra-red	1 1

8ai **8aii**		

KiasuExamPaper

www.KiasuExamPaper.com
284
Downloaded from SingaKids.com

	Both charges have opposite charges (position does not matter) All arrows come out of positive charge and go into negative charge	1 1
8bi	There will be an increase in magnetic field lines. The magnetic field lines will get closer together.	 1
8bii	The two charges will have a stronger attraction to each other.	1

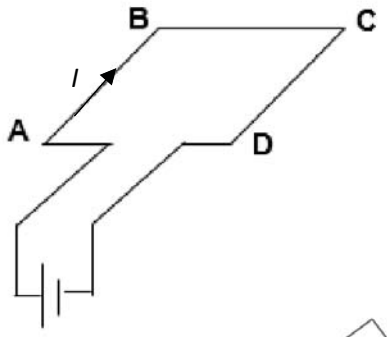
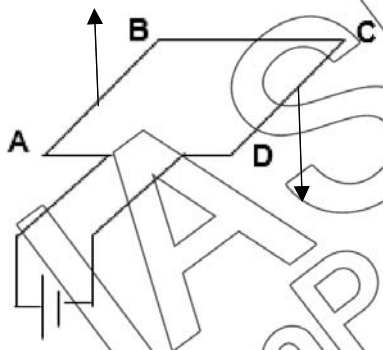
9a	When current, I = 0.25 A, V = 3.75, 3.8 V (from the graph) Therefore, Resistance, R = V / I = 3.7 / 0.25 = 14.8 Ω	1 1
9b	There is an increase in the ratio of potential difference to current, which is equivalent to resistance.	1
9ci	Potential difference across 40 Ω resistor = potential difference across the lamp = 3.75-3.8 V (parallel connection)	 1
9cii	Current, I = V/R = 3.7 / 40 = 0.0925 A or 0.093 A	 1 1

Section B

10a	Point P : convection Point Q : conduction Point R : radiation	1 1 1
10bi	The thermal energy gained is only **converted to potential energy** between points B and C. This energy is used to **break the intermolecular bonds**. Temperature is a measure of kinetic energy. Since there is **no gain in kinetic energy, temperature remains constant.**	1 1 1
10bii	The water molecules vibrate **more vigorously** and randomly around each other. They **remain closely packed** in random arrangement.	1 1
10ci	Evaporation.	1
10cii	Evaporation can occur at all temperatures.	1

11ai	When the switch is closed, the solenoid will become a temporary magnet. The iron rods will also become temporary magnets and attain the same polarity at the same ends. Since like poles repel, the two iron rods will repel from each other.	 1 1
11aii	When the switch is opened, the current will stop flowing through the solenoid and the solenoid will cease to be a temporary magnet. The iron rods, being made of iron will also lose magnetism as iron is a soft magnet and does not retain magnetism.	 1 1

www.KiasuExamPaper.com
285
Downloaded from SingaKids.com

	Hence the two iron rods will not repel and will instead come close to each other at the bottom of the solenoid since the solenoid is cylindrically shaped.	
11bi		1
11bii		1
11biii	2 x 2 = 4 Ncm	1 1
11biv	The direction of the force will be reversed. The force at section **AB** will point downwards while the force at section **CD** will point upwards.	1
11bv	Increase the current or use a stronger North and South poles.	1

12a	<table><tr><td>Name of wire</td><td>Colour</td></tr><tr><td>Live wire</td><td>Brown</td></tr><tr><td>Neutral wire</td><td>Blue</td></tr><tr><td>Earth wire</td><td>Green and Yellow</td></tr></table>	3
12b	I = 2500/240 = 10.4 A	1 1
12c	Suitable fuse rating = 13 A The fuse rating should be slightly higher than the current flowing in the circuit for the fuse to work under normal working conditions of the electric kettle.	1 1
12d	Total cost = $(0.23 x 2.5 x 7) = $4.03	1 1
12e	The additional earth wire in the 3-pin plug helps to redirect current away from the user and prevent an electric shock.	1

The End

www.KiasuExamPaper.com
286
Downloaded from SingaKids.com