

Teaching guide: sample A02 questions and mark schemes

Balancing the teaching focus to address the demands of the assessment objectives

Many teachers have said that they are finding it difficult to teach all the content of the specification as well as meeting the changes in the Assessment Objectives.

Assessment Objective 2 (AO2) appears to be the most challenging and something teachers feel students can't access until they 'know all the content'.

What is AO2 and how can teachers approach integrating it into lessons?

AO2 aims to assess students' ability to **apply** scientific ideas, theories, scientific enquiry, practical skills and techniques, to **explain** phenomena and observations in **familiar and unfamiliar context**. This is how scientists work every day. They take a body of knowledge and use it to explain what is happening around us and to build on it to move science forward.

The subject level guidance given by Ofqual clearly sets out the two strands of AO2.

The full version of [Ofqual's GCSE Subject Level Guidance for Combined Science \(July 2015\)](#) is available on their website.

What does AO2 look like in the exams?

By looking at questions from the first set of specimen assessment material, you will see that many of the things you are already teaching fall under AO2 – calculations, graph work and using models to explain phenomena.

Using knowledge to explain phenomena and observations in an unfamiliar context can be more challenging to students, as well as for teachers to plan for.

Although the students might not have learnt about the content in the exact context used in the question, they will have been taught the underlying science. There are three example questions that highlight AO2 in an unfamiliar context:

- Combined Science: Trilogy Biology Higher Tier Paper 2 Q01.
- Combined Science Trilogy: Chemistry Higher Tier paper 1 Q02.
- Physics Higher Tier Paper 2 Q04.2.

When tackling this type of exam question, students need to build the confidence to recognise what subject areas the context of the question is referring to, to feel secure that they know the content or practical. This can only be addressed by integrating these opportunities into everyday lessons by open questions, dialogue and opportunities to write explanations.

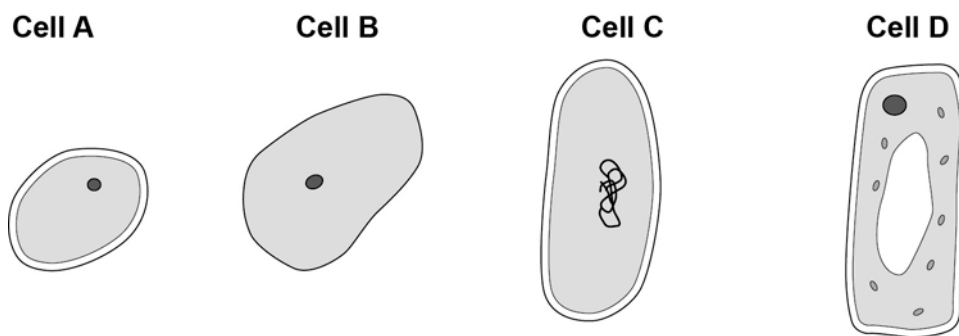
Combined Science Trilogy: Biology Higher Tier Paper 1

Standard demand

0 1

Figure 1 shows four different types of cell.

Figure 1



0 1 . 1

Which cell is a plant cell?

Give **one** reason for your answer.

[2 marks]

Cell _____

Reason _____

AO2/1 (S)

0 1 . 2

Which cell is an animal cell?

Give **one** reason for your answer.

[2 marks]

Cell _____

Reason _____

AO2/1 (S)

0 1 . 3

Which cell is a prokaryotic cell?

Give **one** reason for your answer.

[2 marks]

Cell _____

Reason _____

AO2/1 (S)

0 1 . 4

A scientist observed a cell using an electron microscope.

The size of the image was 25 mm.

The magnification was $\times 100\,000$

Calculate the real size of the cell.

Use the equation:

$$\text{magnification} = \frac{\text{image size}}{\text{real size}}$$

Give your answer in micrometres.

[3 marks]

Real size = _____ micrometres

AO2/1 (S)

Mark scheme

Question	Answers	Extra information	Mark	AO/spec ref
01.1	D		1	AO2/1 4.1.1.2
	any one from: <ul style="list-style-type: none"> • has chloroplasts • has a (large) vacuole 	ignore has a (cell) wall	1	AO2/1 4.1.1.2
01.2	B		1	AO2/1 4.1.1.2
	does not have a (cell) wall	allow has <u>only</u> a nucleus, (cell) membrane and cytoplasm	1	AO2/1 4.1.1.2
01.3	C		1	AO2/1 4.1.1.1
	any one from: <ul style="list-style-type: none"> • genetic material is not in a nucleus • has a single loop of DNA 	allow no nucleus	1	AO2/1 4.1.1.1
01.4	real size = 25 / 100 000		1	AO2/2 4.1.1.5
	0.00025		1	AO2/2 4.1.1.5
	(conversion to) 0.25 (µm)	allow 0.25 (µm) with no working shown for 3 marks	1	AO2/2 4.1.1.5
Total			9	

Combined Science Trilogy: Biology Higher Tier Paper 1

Standard (S) and Higher (H) demand

0 6

In 2014 there was an outbreak of Ebola virus disease (EVD) in Africa.

At the time of the outbreak there were:

- no drugs to treat the disease
- no vaccines to prevent infection.

0 6 . **1**

By March 2015 there were an estimated 9 850 deaths worldwide from EVD.

The number of deaths is an estimate.

Suggest why it is an estimate rather than an exact number.

[1 mark]

AO3 (S)

0 6 . **2**

Why were antibiotics **not** used to treat EVD?

[1 mark]

AO1 (S)

After the outbreak began, drug companies started to develop drugs and vaccines for EVD.

A drug has to be thoroughly tested and trialled before it is licensed for use.

Testing, trialling and licensing new drugs usually takes several years.

0 6 . **3** Draw **one** line from each word about drug testing to the definition of the word.

[2 marks]

Word about drug testing

Definition

Dose

Side effects making the person ill

Efficacy

The concentration of the drug to be used and how often the drug should be given

Toxicity

Whether the drug works to treat the illness

AO2/2 (S)

0 6 . **4** The results of drug testing and drug trials are studied in detail by other scientists.

Only then can the results be published by the drug company.

Suggest **one** reason why the results are studied by other scientists.

[1 mark]

AO2/2 (S)

The number of deaths from EVD continued to increase.

The World Health Organization (WHO) decided it was ethical to use unlicensed drugs.

The WHO said unlicensed drugs could only be given to people who gave their permission.

Also, any results had to be shared with other researchers and drug companies.

Some vaccines had shown positive results in animal testing, but the vaccines had not been tested and trialled in humans.

The supplies of the vaccine were low.

At first the vaccines were only used for health workers.

0 6 . **5**

How would the use of a vaccine **reduce the spread** of EVD?

[2 marks]

AO1 (H)

0 6 . **6**

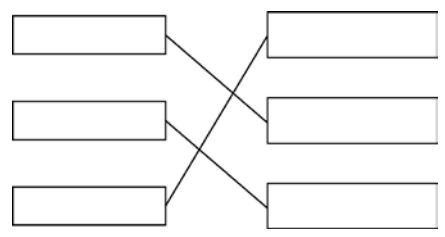
Evaluate the use of unlicensed drugs and vaccines during the EVD outbreak.

Give a conclusion.

[6 marks]

AO2/2 and AO3 (S and H)

Question 6

Question	Answers	Extra information	Mark	AO/spec ref
06.1	any one from: <ul style="list-style-type: none"> not all deaths recorded not all causes of deaths recorded 	allow cause may not be known	1	AO3/1b 4.3.1.1
06.2	antibiotics do not kill viruses	allow antibiotics <u>only</u> kill bacteria	1	AO1/1 4.3.1.8
06.3		all correct for 2 marks 1 or 2 correct for 1 mark	2	AO2/2 4.3.1.9
06.4	any one from: <ul style="list-style-type: none"> to prevent false claims to make sure the conclusions are correct / valid to avoid bias 		1	AO1/2 4.3.1.9
06.5	some people would be immune to EVD	allow those vaccinated would not contract the disease	1	AO1/1 4.3.1.7
	if less people (in a population) have EVD less chance of it being passed on		1	AO1/1 4.3.1.7

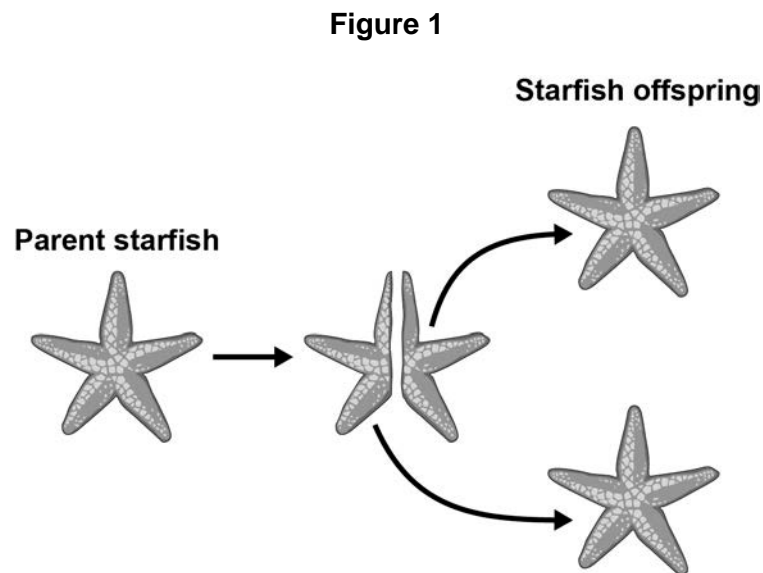
Question 6 continued

Question	Answers	Extra information	Mark	AO/spec ref
<p>06.6</p>	<p>Level 3: A detailed and coherent evaluation is provided which considers a range of arguments for and against the use of unlicensed drugs and comes to a conclusion consistent with the reasoning.</p>		5–6	AO3/1b 4.3.1.1 4.3.1.7 4.3.1.9
	<p>Level 2: An attempt to give arguments for and against the use of unlicensed drugs is made. The logic may be inconsistent at times but builds towards a coherent argument.</p>		3–4	AO3/1b 4.3.1.1 4.3.1.7 4.3.1.9
	<p>Level 1: Discrete relevant points made. The logic may be unclear and the conclusion, if present, may not be consistent with the reasoning.</p>		1–2	AO2/2 4.3.1.1 4.3.1.7 4.3.1.9
	<p>No relevant content</p>		0	
	<p>Indicative content</p> <p>pros</p> <ul style="list-style-type: none"> • might save some lives • vaccine could reduce chance of future outbreaks • patient made aware of risk and agreed to use of drug • sharing of results could speed up development of effective vaccines / drugs • used mainly for health workers who were risking their lives to help <p>cons</p> <ul style="list-style-type: none"> • could be dangerous <p>or</p> <ul style="list-style-type: none"> vaccine could harm a healthy person • goes against legislation / laws governing drug development • might set a precedent for other drugs not to be fully tested • unfair as not available to the African people <p>a justified conclusion</p>			
<p>Total</p>			<p>13</p>	

Combined Science: Trilogy Biology Higher Tier Paper 2
Standard demand

0 1

Starfish can split in half. Each half can then grow new arms to form offspring.
This process is shown in **Figure 1**.



0 1

. 1

What process produces the starfish offspring?

[1 mark]

Tick **one** box.

Asexual reproduction

Fertilisation

Selective breeding

Sexual reproduction

AO1 (S)

0 1 . **2** More cells are produced as the starfish grows more arms.

What process will produce more cells in the starfish as they grow?

[1 mark]

AO2/1 (S)

0 1 . **3** All the offspring produced are genetically identical.

What name is given to genetically identical organisms?

[1 mark]

AO1 (S)

0 1 . **4** Each body cell of the parent starfish contains 44 chromosomes.

How many chromosomes are in each body cell of the offspring?

[1 mark]

AO2/1 (S)

Question 1

Question	Answers	Extra information	Mark	AO/spec ref
01.1	asexual reproduction		1	AO1/1 4.6.1.1
01.2	mitosis		1	AO2/1 4.1.2.2 4.6.1.1
01.3	clones		1	AO1/1 4.6.1.1
01.4	44		1	AO2/1 4.6.1.1
Total			4	

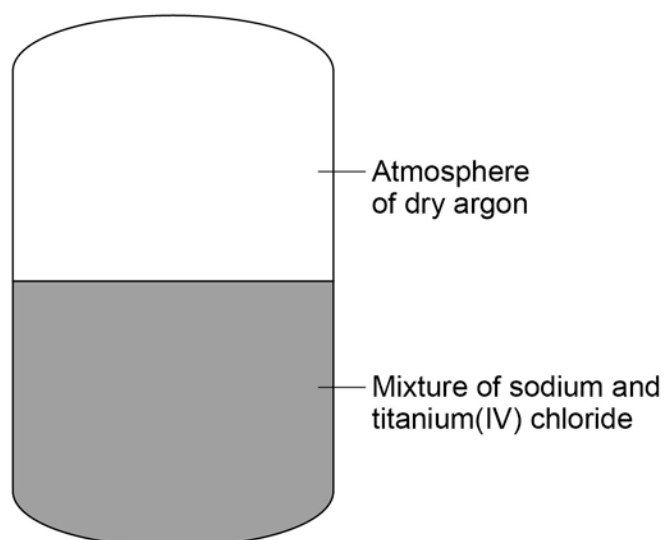
Combined Science Trilogy: Chemistry Higher Tier paper 1

Standard demand

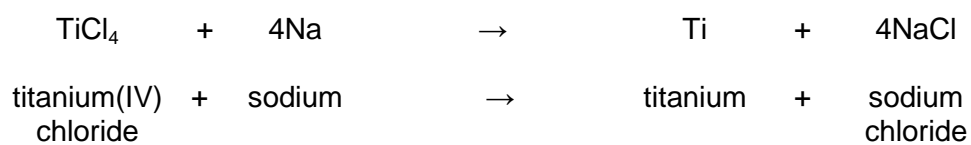
0 2

Figure 2 shows a reactor used to produce titanium from titanium(IV) chloride.

Figure 2



The chemical equation for the reaction of titanium(IV) chloride with sodium is:



0 2 . **1** For one reaction:

- 1615 kg titanium(IV) chloride reacted completely with 782 kg sodium
- 1989 kg sodium chloride was produced.

Calculate the mass of titanium produced from this reaction.

[1 mark]

Mass of titanium = _____

AO2/1 (S)

0 2 . **2** **Table 1** shows the solubility of sodium chloride in 100 cm³ of aqueous solution at different temperatures.

Table 1

Solubility of sodium chloride in g per 100cm³	Temperature in °C
35.72	10
35.89	20
36.09	30
37.37	40
36.69	50
37.04	60

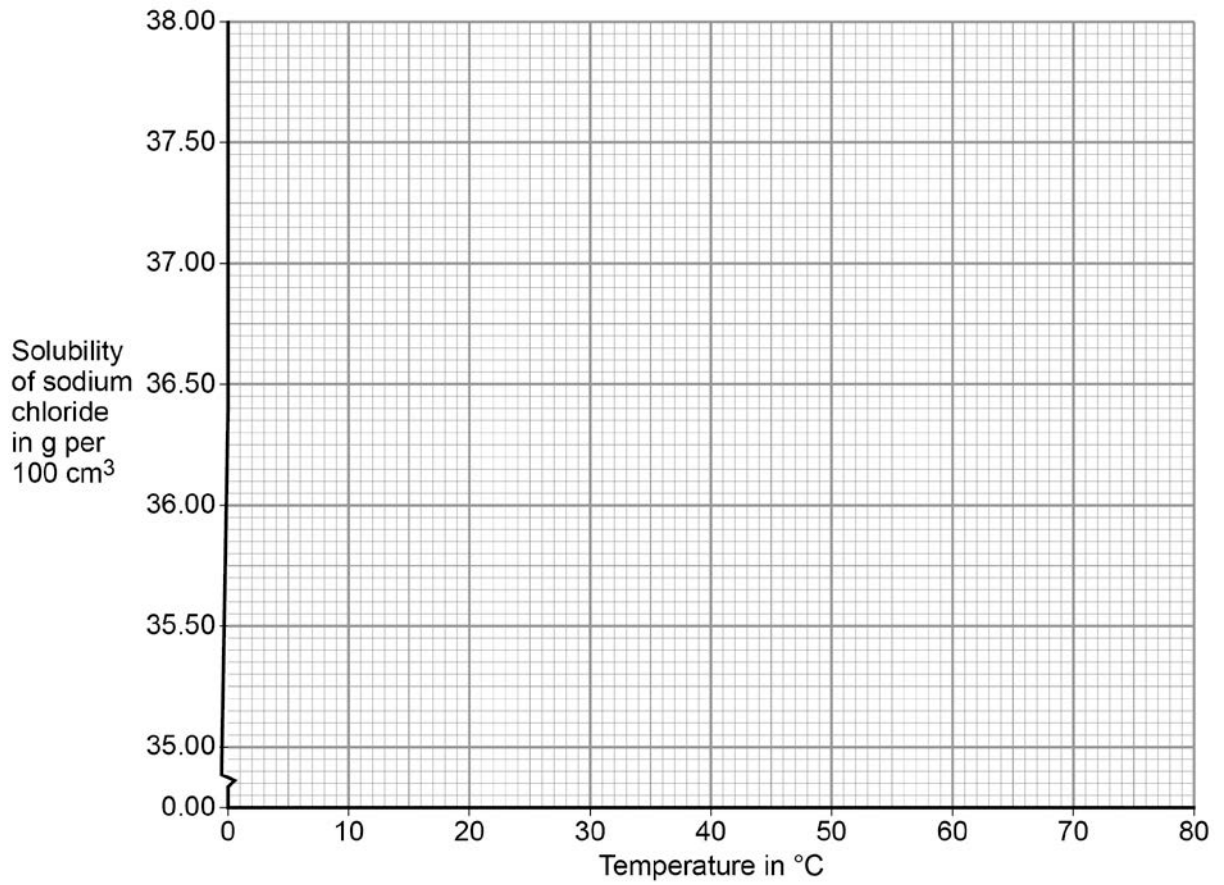
On **Figure 3**:

- plot this data on the grid
- draw a line of best fit.

[3 marks]

AO2/2 (S)

Figure 3



0 2 . **3** The product sodium chloride is dissolved in water to separate it from titanium.

At 30 °C the solubility of sodium chloride is 36 kg per 100 dm³.

Calculate the minimum volume of water in dm³, at 30 °C, needed to dissolve 1989 kg sodium chloride.

[2 marks]

Volume of water = _____ dm³

AO2/1 (S)

0 2 . **4** Calculate the percentage by mass of titanium in titanium (IV) chloride (TiCl_4).

Give your answer to 3 significant figures.

Relative atomic masses (A_r): Cl = 35.5; Ti = 48

[3 marks]

Percentage of titanium by mass = _____

AO2/1 (S)

Question 2

Question	Answers	Extra information	Mark	AO/spec ref
02.1	408 kg		1	AO2/1 5.3.1.1
02.2	all points correct best fit line	± ½ small square allow 1 mark if 5 points correct	2 1	AO2/2 5.3.2.5
02.3	$\frac{1989 \times 100}{36}$ 5525 dm ³		1 1	AO2/1 5.3.25
02.4	relative formula mass of TiCl ₄ is 190 25.26 % answer given to 3 significant figures = 25.3 %	25.23% with or without working gains 3 marks	1 1 1	AO2/1 5.3.1.2
02.5	argon is unreactive water (vapour) would react with sodium and air contains oxygen that would react with reactants	allow water (vapour) would react with titanium(IV) chloride allow and air contains oxygen that would react with products	1 1 1	AO3/2a 5.1.2.4, 5 5.4.1.1
02.6	(titanium conducts electricity) because electrons in the outer shell of the metal atoms are delocalised and so electrons are free to move through the whole structure	allow the delocalised electrons in the metal carry electrical charge through the metal	1 1 1	AO1/1 5.2.1.5 5.2.2.8
Total			15	

Combined Science Trilogy: Chemistry Higher Tier paper 1

Standard (S) and Higher (H) demand

0 4 Copper can be produced from copper(II) sulfate solution by two different methods.

Method 1 – Electrolysis

0 4 . **1** To produce copper by electrolysis a student has inert electrodes, a dc power supply, a switch and electrical wires for the external circuit.

Draw and label the apparatus set up to produce copper from copper(II) sulfate solution by electrolysis.

[2 marks]

AO1 (S)

0 4 . **2** Suggest why the colour of the copper(II) sulfate solution fades during the electrolysis

[3 marks]

AO1 and AO2/1 (H)

0 4 . **3** Explain how copper is produced from copper(II) sulfate solution by electrolysis

[2 marks]

AO1 AO2 (S 2 marks and H 2 marks)

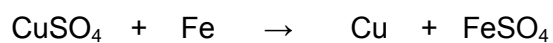
Method 2 – Displacement

0	4
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4

 The chemical equation for the displacement of copper using iron is:



Calculate the minimum mass of iron needed to displace all of the copper from 50 cm³ of copper(II) sulfate solution.

The concentration of the copper(II) sulfate solution is 80 g CuSO₄ per dm³.

Relative atomic masses (*A_r*): O = 16; S = 32; Fe = 56; Cu = 63.5

Give your answer to 2 significant figures.

[4 marks]

Mass of iron = g

AO2/1 (H)

Question 4

Question	Answers	Extra information	Mark	AO/spec ref
04.1	<p>electrodes connected to d.c. power supply by wires</p> <p>electrodes labelled anode (+) and cathode (-)</p>	<p>for this diagram ignore the material used for the electrodes as long as they are made from carbon or metals that are inert</p>	1	AO1/2 5.4.3.1, 4
04.2	<p>copper ions cause the blue colour</p> <p>copper ions are reduced/converted to copper ions</p> <p>so the concentration of copper ions decreased</p>	<p>answer must be in terms on copper ions</p> <p>if no other mark awarded allow 1 mark for copper ions are used up</p>	<p>1</p> <p>1</p> <p>1</p>	<p>AO1/1</p> <p>AO2/1</p> <p>AO2/1</p> <p>5.4.3.1, 4</p> <p>5.10.1.4</p>
04.3	<p>copper ions are positive</p> <p>so are attracted to the inert cathode or inert negative electrode</p> <p>copper ions gain electrons at the inert cathode or inert negative electrode</p> <p>so they are reduced to form copper atoms</p>		<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>AO1/1</p> <p>AO2/1</p> <p>AO1/1</p> <p>AO2/1</p> <p>5.4.3.1, 4</p>

<p>04.4</p>	<p>50 cm³ contains 4 g CuSO₄</p> <p>Mr CuSO₄ = 159.5</p> <p>4 g CuSO₄ reacts with $\frac{4}{159.5} \times 56$ g Fe</p> <p>= 1.40(43877)</p> <p>= 1.4 (g)</p>	<p>accept 1.4(g) with no working shown for 4 marks</p> <p>allow 1.40(43877) without working shown for 3</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>AO2/1</p> <p>5.3.2.1, 2, 3, 5</p>
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Combined Science Trilogy: Chemistry Foundation Tier Paper 2

Low (L) and Standard (S) demand

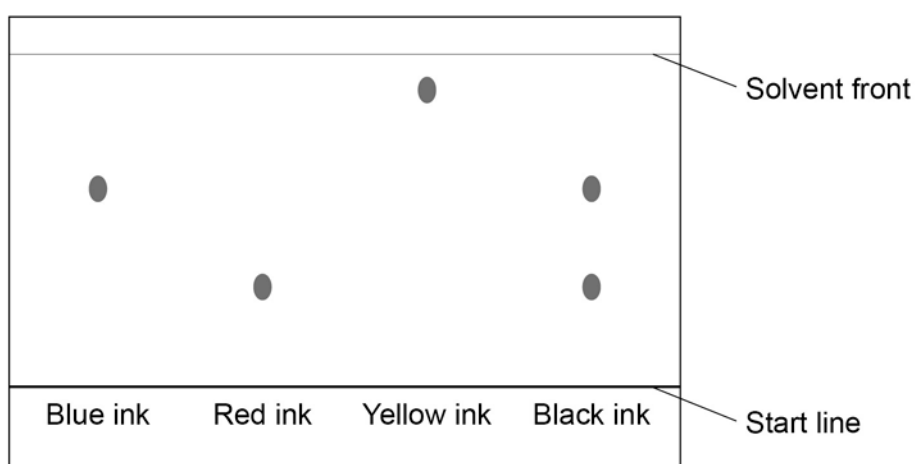
Q05 (part)

0 5 . 2

The student then set up the apparatus without making any mistakes.

Figure 6 shows his results.

Figure 6



What colours are in the black ink?

[1 mark]

AO2/2(L)

0 5 . 3

Which of the inks is the most soluble in the solvent?

Give a reason for your answer.

[2 marks]

Ink _____

Reason _____

AO2/2(L)

0 5 . **4** Use **Figure 6** to complete **Table 4**, then calculate the R_f value for red ink.

[5 marks]

Table 4

	Distance in mm
Distance moved by red ink
Distance from start line to solvent front

The R_f value for red ink is calculated using the equation.

$$R_f = \frac{\text{distance moved by red ink from the start line}}{\text{distance moved by solvent from the start line}}$$

Give your answer to two significant figures.

R_f value = _____

AO2/2 (L 2 and S 2)

0 5 . **5** How can you tell from **Figure 6** that the R_f value for the blue ink is greater than the R_f value for the red ink?

[1 mark]

AO2/2 (L)

Question 5

Question	Answers	Extra information	Mark	AO/spec ref
05.1	start line drawn in ink		1	AO3/2b
	(so) line would run		1	5.8.1.3
	start line below solvent level		1	
	(so) samples would wash off		1	
05.2	red and blue	both colours needed	1	AO2/2 5.8.1.3
05.3	yellow		1	AO2/2
	travels furthest up the paper		1	5.8.1.3
05.4	distance moved by red ink 13 ± 1	measurements in cm max	1	AO2/2
	distance from start line to solvent front 44 ± 1	1 mark for mps 1 and 2	1	5.8.1.3
	correct substitution		1	
	correct answer	allow ecf from Table 4	1	
	to 2 significant figures	range if correct is 0.27 to 0.33	1	
05.5	moves further or nearer the top of the paper		1	AO2/2 5.8.1.3
Total			13	

Combined Science Trilogy: Physics Foundation Tier Paper 2

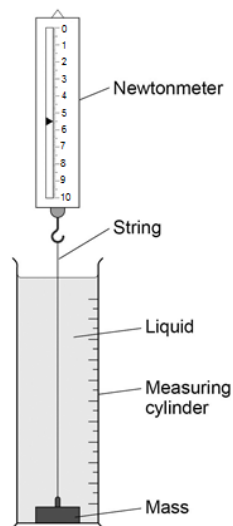
Low demand

0 3

A student investigated the force needed to raise a mass through different liquids at a constant speed.

She set up the apparatus shown in **Figure 5**.

Figure 5



0 3 . 1

In the investigation there are several variables.

Draw **one** line from each variable to the correct description for this investigation.

[3 marks]

Variable

Description

Control

Distance the mass was lifted

Dependent

Value of force on the newtonmeter

Independent

Mass

Type of liquid

AO2/2 (L)

Table 2 shows the student's results.

Table 2

Liquid	Force in N
Water	10.0
Washing up liquid	11.1
Glycerol	11.5
Syrup	13.8

0 3 . 2 What was the resolution of the newtonmeter?

Tick **one** box.

[1 mark]

0.1 N

0.5 N

1 N

10 N

AO2/2 (L)

0 3 . 3 The student wanted to display her results.

How should she display her results?

[1 mark]

Tick **one** box.

A bar chart

A line graph

A pie chart

AO2/2 (L)

0 3 . **4** Give a reason for your answer to part **03.3**.

[1 mark]

AO2/2 (L)

0 3 . **5** A force of 13.8 N was used to lift the mass 30 cm vertically through the liquid.
Use the following equation to calculate the work done in lifting the mass.

Work done = force \times distance

Choose the correct unit from the box.

[3 marks]

J	m/s	N
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Work done = _____

Unit = _____

AO2/1 (L)

Question 3

Question	Answers	Extra information	Mark	AO/spec ref
03.1	<p style="text-align: center;">Variable Description</p>	<p>allow one mark for each correct line</p> <p>if more than one line is drawn from any variable then all of those lines are wrong</p>	1 1 1	AO3/3a AO2/2 AO2/2 6.5.1.2 WS2.2, 4.1
03.2	0.1 N	if more than one box ticked apply list principle	1	AO2/2 6.5.1.2 WS2.3
03.3	A bar chart	if more than one box ticked apply list principle	1	AO2/2 6.5.1.2 WS3.1
03.4	some of the data is categoric		1	AO2/2 6.5.1.2 WS3.1
03.5	13.8 × 0.30 4.14 J	allow 4.14 without working shown for 2 marks	1 1 1	AO2/1 AO2/1 AO1/1 6.5.2 WS4.3
Total			9	

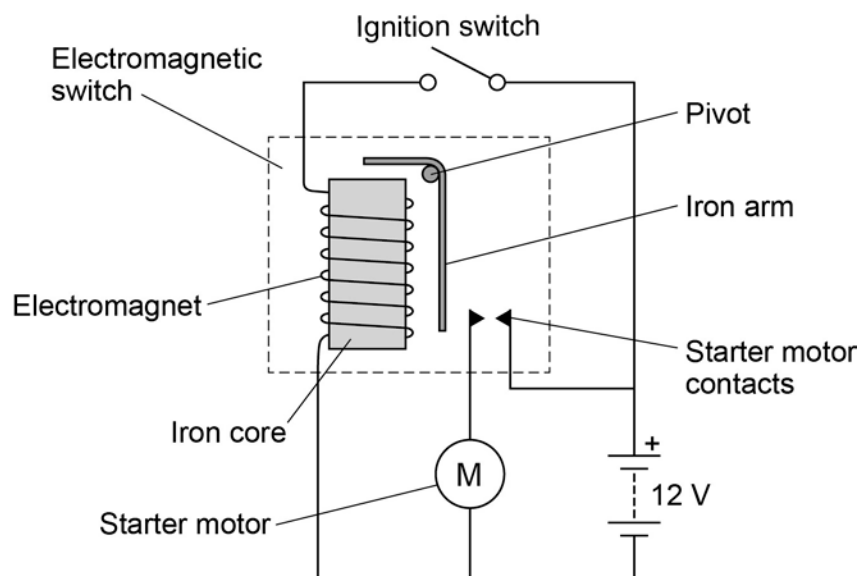
Physics Higher Tier Paper 2

Standard demand

0 4 . 2 **Figure 11** shows the ignition circuit used to switch the starter motor in a car on.

The circuit includes an electromagnetic switch.

Figure 11



Explain how the ignition circuit works.

[4 marks]

AO2/1 (S)

Question 4

Question	Answers	Extra information	Mark	AO/spec ref
04.1	move a (magnetic/plotting) compass around the wire		1	AO1/2 4.7.2.1
	the changing direction of the compass needle shows a magnetic field has been produced		1	
04.2	OR		4	AO2/1 4.7.2.1
	sprinkle iron filings onto the card (1)			
	tapping the card will move the filings to show the magnetic field (pattern) (1)			
	Level 2: A detailed and coherent explanation is provided. The response makes logical links between clearly identified, relevant points that explain how the ignition circuit works.			
Level 1: Simple statements are made. The response may fail to make logical links between the points raised.	1–2			
No relevant content	0			
Indicative content				
<ul style="list-style-type: none"> • closing the (ignition) switch causes a current to pass through the electromagnet • the iron core (of the electromagnet) becomes magnetised • the electromagnet/iron core attracts the (short side of the) iron arm • the iron arm pushes the contacts (inside the electromagnetic switch) together • the starter motor circuit is complete • a current flows through the starter motor (which then turns) 				
Total			6	

Combined Science Trilogy: Physics Higher Tier Paper 2

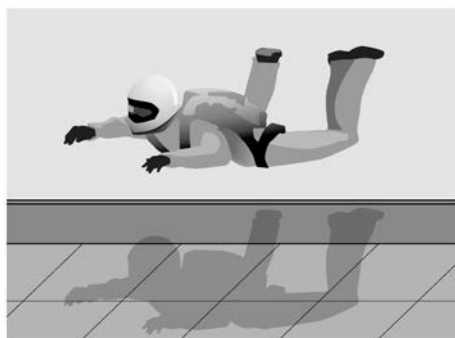
Standard and Higher demand

0 5

Figure 4 shows a skydiver training in an indoor wind tunnel.

Large fans below the skydiver blow air upwards.

Figure 4



0 5 . 1

The skydiver is in a stationary position.

Complete the free body diagram for the skydiver.

[2 marks]

Force from the air



AO2/1 (S)

0 5 .

2

The skydiver now straightens his legs to increase his surface area.

This causes the skydiver to accelerate upwards.

Explain why straightening his legs cause the skydiver to accelerate upwards.

[2 marks]

AO2/1 (H)

0 5 . 3

A small aeroplane used for skydiving moves along a runway.

The aeroplane accelerates at 2 m/s^2 from a velocity of 8 m/s .

After a distance of 209 m it reaches its take-off velocity.

Calculate the take-off velocity of the aeroplane.

[3 marks]

Take-off velocity = _____ m/s

AO2/1 (H)

0 5 . 4

A skydiver jumps from an aeroplane.

There is a resultant vertical force of 300 N on the skydiver.

There is a horizontal force from the wind of 60 N .

Draw a vector diagram on **Figure 5** to determine the magnitude and direction of the resultant force on the skydiver.

[4 marks]

Magnitude of resultant force = _____ N

AO2/1 (H)

Question 5

Question	Answers	Extra information	Mark	AO/spec ref
05.1	arrow of equal size pointing vertically downwards	judged by eye	1	AO2/1
	labelled 'weight'		1	AO1/1 6.5.1.1/2/ 3
05.2	the upwards force is greater than the downwards force because air resistance increases		1 1	AO2/1 6.5.4.2.2
05.3	$v^2 = (2 \times 2 \times 209) + 8^2$		1	AO2/1
	$v = \sqrt{900}$		1	6.5.4.1.5 WS3.3
	$v = 30 \text{ (m/s)}$		1	
		allow 30 (m/s) without working shown for 3 calculation marks		
05.4	vertical force (300 N) drawn with a suitable scale		1	AO2/1
	horizontal force (60 N) drawn to the same scale		1	6.5.1.4
	resultant force drawn in correct direction		1	
	value of resultant in the range 304 N – 308 N		1	
Total			11	

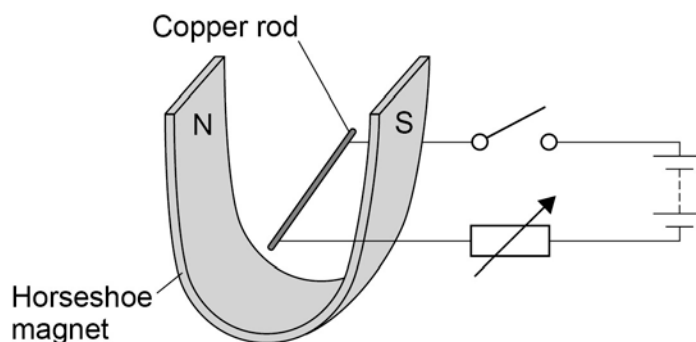
Combined Science Trilogy: Physics Higher Tier Paper 2

Higher demand

0 6

A teacher used the equipment shown in **Figure 6** to demonstrate the motor effect.

Figure 6



0 6 . 1

Describe how Fleming's left-hand rule can be used to determine the direction in which the rod will move when the switch is closed, and state the direction.

[4 marks]

AO1 (H)

0 6 . 2

Increasing the current can increase the force acting on the copper rod.

Give **one** other way in which the size of the force acting on the copper rod could be increased.

[1 mark]

AO2/2 (H)

0 6 . 3

The copper rod in **Figure 6** has a length of 7 cm and a mass of 4×10^{-4} kg.

When there is a current of 1.12 A the resultant force on the copper rod is 0 N.

Calculate the magnetic flux density.

Gravitational field strength = 9.8 N/kg

[5 marks]

Magnetic flux density = _____ T

AO2/1 (H)

Question 6

Question	Answers	Extra information	Mark	AO/spec ref
06.1	<p>thumb, index finger and third finger are held mutually at right angles</p> <p>index finger shows the direction of the magnetic field from North to South, third finger shows the direction of the current from positive to negative terminal</p> <p>the thumb then shows the direction of the force acting on the copper rod</p> <p>so the copper rod will move from left to right</p>		<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>AO1/2</p> <p>6.7.2.2</p>
06.2	<p>any one from:</p> <p>use a stronger magnet</p> <p>increase the magnetic flux density</p> <p>increase the length of the copper rod in the magnetic field</p> <p>coil the copper rod</p>		<p>1</p>	<p>AO2/2</p> <p>6.7.2.2</p>
06.3	<p>$W = 9.8 \times 4 \times 10^{-4} = 3.92 \times 10^{-3}$</p> <p>conversion of the length 7cm to 0.07m</p> <p>$3.92 \times 10^{-3} = B \times 1.12 \times 0.07$</p> <p>$B = 3.92 \times 10^{-3} / 0.0784$</p> <p>$B = 0.05 \text{ (T)}$</p>	<p>allow 0.05 (T) without working shown for the 5 calculation marks</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>AO2/2</p> <p>6.5.1.3</p> <p>6.7.2.2</p> <p>WS4.5</p>
Total			10	