Practice Exams for A Level OCR A Physics

Paper 2: Exploring Physics

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Contents

Teacher's Introduction

> **Remember!**
> Always check the exam board website for new information, including changes to the specification and sample assessment material.

These practice examinations support the OCR A Level specification for Physics A (H556). This specification is new, and the first examinations were sat in 2017. This means that students have very limited access to past papers.

Although they can work through many relevant questions from textbooks and old syllabuses, students are unable to get a proper feel for the format, scope and length of the three papers that they will have to sit in the real examination period.

These practice examinations have, therefore, been written so that teachers can give their students more practice in doing whole 'past papers'. Each paper follows the exact same format and mark structure as the real examination. The whole specification is addressed, and the papers meet the minimum 40% high-level mathematical skills and 15% practical skills required by the exam board. The mark schemes are also written in the same format as the real mark s chemes and use the same language, so that students can gain a good understanding of how mark schemes work and what the examiners are expecting.

These papers are best used in their entirety, either as mock papers sat under examination conditions, or as a homework exercise set in the last weeks before the examination period. This gives students the best chance of learning how to pace themselves correctly. They will also be less anxious as the examination period approaches, since they know better what to expect.

Questions marked with an asterisk (*) are level of response questions which will test students' written communication skills.

> **Note regarding non-write-on section**
> Each paper contain some content that requires drawing on a graph or table. An insert has been included after each test which should be handed out to students before beginning the paper.

Specification Cross-Reference Table

	Paper 1				Paper 2				Paper 3			
	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4
Module 2: Foundations of physics												
2.1 Physical quantities and units	[illegible]	2	1, 4, 21	1, 2, 3		1, 10	1					
2.2 Making measurements and analysing data	3, 2[illegible]	1, 17, 18, 19, 21	2, 8, 18, 19	1, 7, 18, 19, 21	18	4, 17, 18, 19	17, 18, 19	16, 17, 20	2, 3, 6	1, 4, 6	4, 7	5
2.3 Nature of quantities	1, 8, 16, 18	[illegible], 3, 5, 16		4, 6, 17		5				5	1	
Module 3: Forces and motion												
3.1 Motion	5, 21	5, 16, 17, [illegible]3	5, 16	2, 4, 20					1, [illegible]		1	
3.2 Forces in action	8, 16, 17, 18, 19, 21	4, [illegible]	4, 6, 17	2, 6, 16, 17, 18					2, 3	1, 5	5	
3.3 Work, energy and power	7, 18	18	3, 7	3, 9, 12, 13, 20					1	5, 7	1	6, 7
3.4 Materials	6, 9	8, 19	4	2, 8, 19						5		
3.5 Newton's laws and momentum	10, 11, 18, 19	4, 7	4, 18	9, 16								4

	Paper 1				Paper 2				Paper 3			
	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4	Set 1	Set 2	Set 3	Set 4
Module 5: Newtonian world and astrophysics												
5.1 Thermal physics	[illegible]0	11, 20, 21	9, 19, 22	10, 21, 22					6	6		6
5.2 Circular motion	1[illegible]4	22		11					2		5	
5.3 Oscillations	1[illegible]	12	10, 11, 20	5					2	2		
5.4 Gravitation	21	23	12, 21								2	7
5.5 Astrophysics and cosmology	15, 22	[illegible]0, 13, 14, 15, 24	13, 14, 15	14, 15, 23, 24						3		7
Module 6: Particles and medical physics												
6.1 Capacitors					19	2, 6	8, 9	1, 7, 8, 19				
6.2 Electric fields					9, 10	21	10, 20	8, 9	5, 7	1, 7		
6.3 Electromagnetism					12, 20	7, 8, 9, 21	11	20	5	2	6	2
6.4 Nuclear and particle physics					10, 11, 12, 14, 15, 21, 22	10, 11, 12, 13, 14, 22, 23	12, 13, 14, 21, 22, 23	10, 11, 12, 13, 14, 21	3, 5, 7	7	2, 3	3, 8
6.5 Medical physics					13, 23	15, 24	15, 23,	13, 15,			3	3

ZigZag Practice Exam Papers

Supporting A Level OCR Physics A

Practice Exam Paper 2

Set 1

Name	

Time allowed

2 hours 15 minutes

Instructions

Answer **all** of the questions and use the space provided.

Information

The total number of marks available for this paper is **100**. Section A is worth 15 marks and Section B is worth 85 marks. The number of marks available for each question is shown on the right

For this paper, you will need:

- Data, Formulae and Relationships Booklet

Additional materials required

- Pencil
- Electronic calculator
- Ruler (cm/mm)

Section A

You should spend a maximum of 30 minutes on this
Write your answer to each question in the box pro
*Answer **all** the questions.*

1 A hollow, insulated metal sphere receives a positive charge of 0.24 μC. T connecting a metal wire between the surface of the sphere and the groun 8.0×10^{-2} s.

How many electrons move during this period, and in which direction?

	Number of electrons	Direction of ele
A	[illegible]	From sphere to
B	1.2×10^{11}	From ground to
C	1.5×10^{12}	From sphere to
D	1.5×10^{12}	From ground to

Your answer ☐

2 A four-barred electric fire is made with four wires, A to D, connected in p

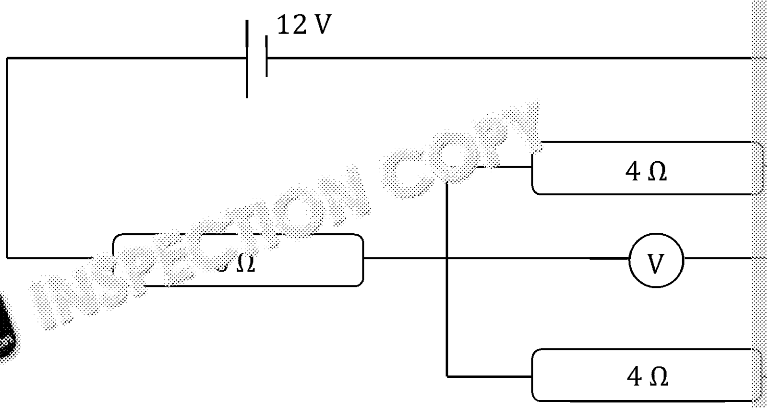
The wires all have the same length, but different radii and resistivities, as

	Resistivity	Radius
A	ρ	r
B	2ρ	r
C	ρ	$2r$
D	2ρ	2r

If all four bars of the fire are switched on at once, which wire would be h

Your answer ☐

3 A circuit is set up using a 12 V power supply with negligible internal resis voltmeter. The circuit diagram is drawn below.



What is the reading on the voltmeter?

A 2 V
B 3 V
C 4 V
D 6 V

Your answer ☐

4 A progressive wave along a stretched string has a speed of 20 m s^{-1} and a
the phase difference between two points on the string which are 25 mm a

A 0°
B 45°
C 90°
D 180°

Your answer ☐

5 A standing wave is set up on a stretched string which is fixed at both ends
of the wave is 64 Hz, there are three antinodes on the string as shown.

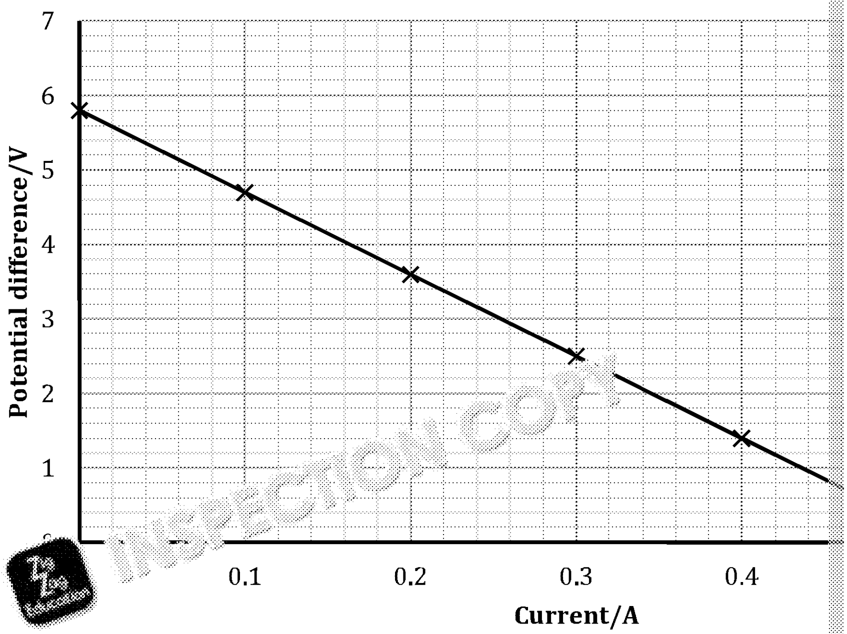
The frequency is increased to 384 Hz.

How many antinodes are there on the string now?

A 6
B 9
C 12
D 18

Your answer ☐

6 Two identical cells are connected in series with a variable resistor. As the
is varied, the corresponding values of potential difference across the resis
of potential difference against current is shown below.



What is the internal resistance of each cell?

A 2.9 Ω
B 5.5 Ω
C 5.8 Ω
D 11 Ω

Your answer ☐

7 Which statement is **not** true about microwaves?

A They can be polarised
B They are electromagnetic waves
C They have smaller frequencies than infrared waves
D They are longitudinal waves

Your answer ☐

8 A beam of electromagnetic radiation is incident on a negatively charged [illegible] photoelectrons are emitted. Which row, A to D, shows the correct effect [illegible] the incident radiation?

	Average kinetic [illegible] photo[illegible]	**Number of ph[illegible] emitted pe[illegible]**
A	[illegible]reases	Stays th[illegible]
B	Increases	Increa[illegible]
[illegible]	Stays the same	Increa[illegible]
D	Stays the same	Stays th[illegible]

Your answer ☐

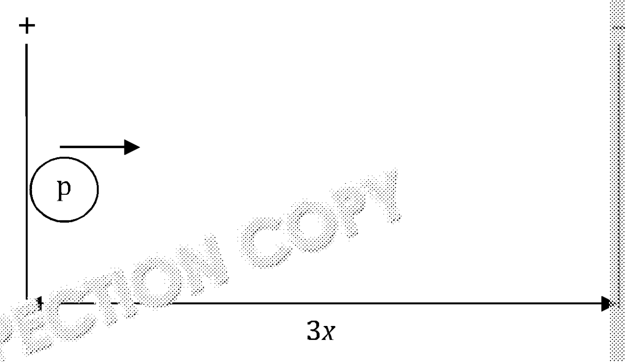
9 An isolated hollow conducting sphere of radius $2R$ has a charge +Q. The [illegible] R from the centre of the sphere is V.

What is the magnitude of the potential at the surface of the sphere?

A $\frac{1}{4}V$
B $\frac{1}{2}V$
C V
D $2V$

Your answer ☐

10 A proton, labelled p, is released from rest between two oppositely charg[illegible] proton touches the positive plate. The separation of the plates is $3x$.



When [illegible]ton has travelled a distance x, it has velocity v.

What is the velocity of the proton when it has travelled a distance $2x$?

A $\sqrt{2}v$
B $2v$
C $2\sqrt{2}v$
D $4v$

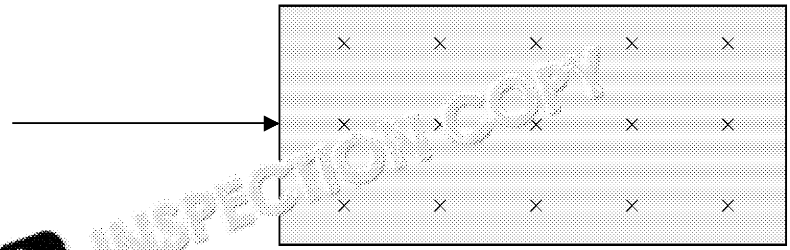
Your answer ☐

11 Which one of the following statements is correct about nuclear fission re

A They do not produce greenhouse gases
B They are renewable energy sources
C The energy they produce comes from radioactive decay
D There are fewer of them than there are nuclear fusion reactors

Your answer ☐

12 A beam of electrons travels from left to right as shown. The beam enters magnetic field directed into the page.



In which direction will the electron beam be deflected initially?

A Into the page
B Out of the page
C Down the page
D Up the page

Your answer ☐

13 Which imaging technique does **not** use ionising radiation?

A An ultrasound scan
B A PET scan
C A CAT scan
D Technetium 99-m used as a medical tracer

Your answer ☐

14 A neutron collides with an antineutron. Pair annihilation occurs and tw

Assume that the kinetic energies of the neutron and antineutron are negl

Mass of neutron = 1.0 u

What is the wavelength of each gamma photon?

A 6.7×10^{-16} m
B 1.3×10^{-15} m
C 2.7×10^{-15} m
D 4.0×10^{-15} m

Your answer ☐

15 There are two electrons in the ground state of helium.

Which force(s) is/are responsible for keeping these electrons bound to th

1 *electromagnetic force*
2 *strong nuclear force*
3 *gravitational force*

A 1, 2 and 3
B Only 1 and 2
C Only 2 and 3
D Only 1

Your answer ☐

Section B

*Answer **all** the questions.*

16 A householder sets up a simple electronic device containing a light-emitti dependent resistor (LDR), shown in Fig. 16.1 below. This device sets off the house and breaks the light beam.

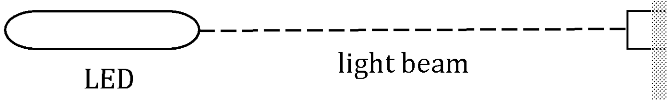


Fig. 16.1

(a) Draw the circuit symbol for an LED.

When the beam of light from the LED reaches the LDR, the alarm is off.

When the beam of light from the LED is cut off and does not reach the LD

The electronic circuit for the LDR is shown in Fig. 16.2 below. The powe resistance. The LDR and a 20 kΩ resistor form a potential divider circuit

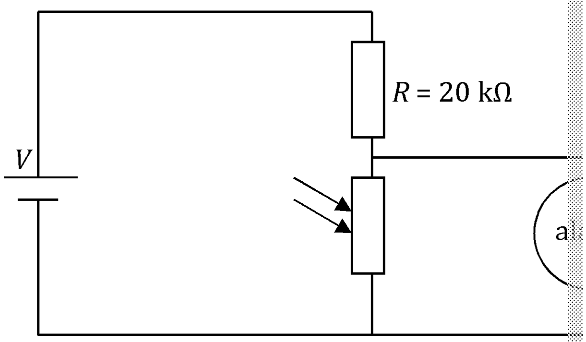


Fig. 16.2

The LDR has a resistance of 5.0 kΩ in the light, and a resistance of 25 kΩ

When the alarm is off, the voltage across the LDR is 2.4 V.

(b) Calculate the voltage, V, of the supply.

(c) Calculate the voltage across the alarm when the alarm triggers.

(d) Discuss whether or not the alarm would still work if the burglar pla
parallel to the **resistor** in the alarm.

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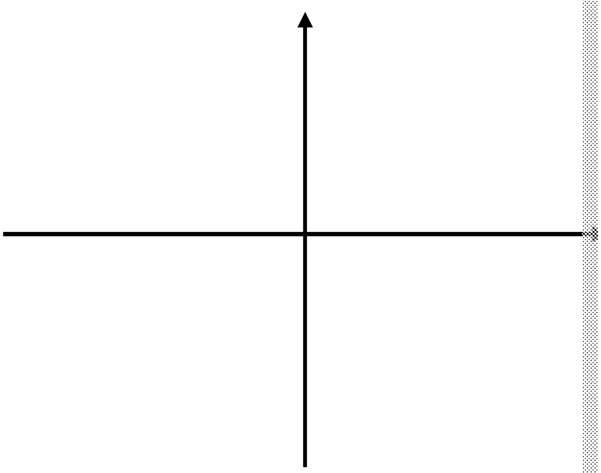
(e) **(i)** In a different circuit, the LED is connected in parallel with the 2
diagram which you could use to plot an I–V characteristic for th

(i g the axes below, sketch the I–V characteristic that you wo



17 This question is about the behaviour of water waves.

A water wave travels across a boundary between deep water and shallow

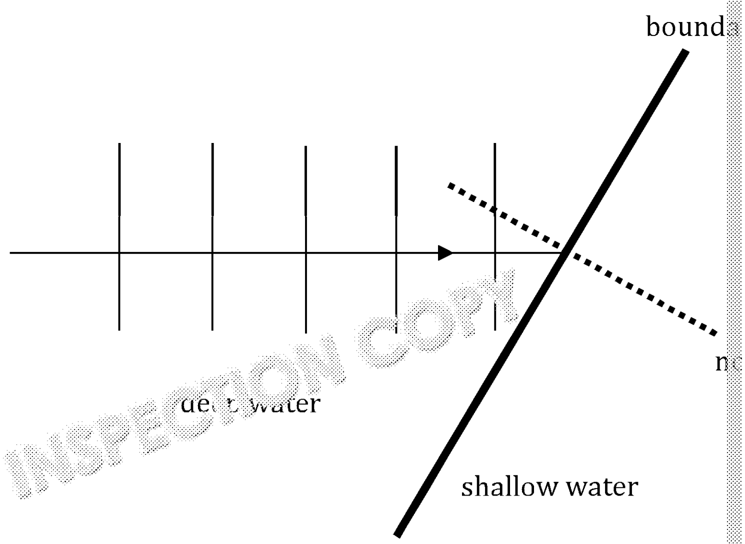


Fig. 17.1

Wavelength of wave in deep water = 60 cm

Speed of wave in deep water = 3.0 m s^{-1}

Speed of wave in shallow water = 2.4 m s^{-1}

(a) (i) Calculate the wavelength, λ, of the water waves in the shallow w

(ii) Complete Fig. 17.1 to show the water ... travelling into the sh

(iii) Explain whether or not it is possible for total internal reflection

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Fig. 17.2 is a photograph which shows sea waves passing through a gap i

Fig. 17.2

(b) Explain why the waves change shape after passing through the gap.

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18 This question is about the photoelectric effect.

(a) Explain what is meant by *the photoelectric effect*.

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Qu

(b) The surface of a sample of sodium is irradiated with monochromati results shown in Fig. 18.1 in an experiment to measure the maximu photoelectrons for different wavelengths of incident radiation. The results, which is shown in Fig. 18.2.

Wavelength, λ / nm	$\frac{1}{\lambda}$ / 10^6 m^{-1}
337	2.97
361	2.77
411	
441	2.27
484	2.07

Fig. 18.1

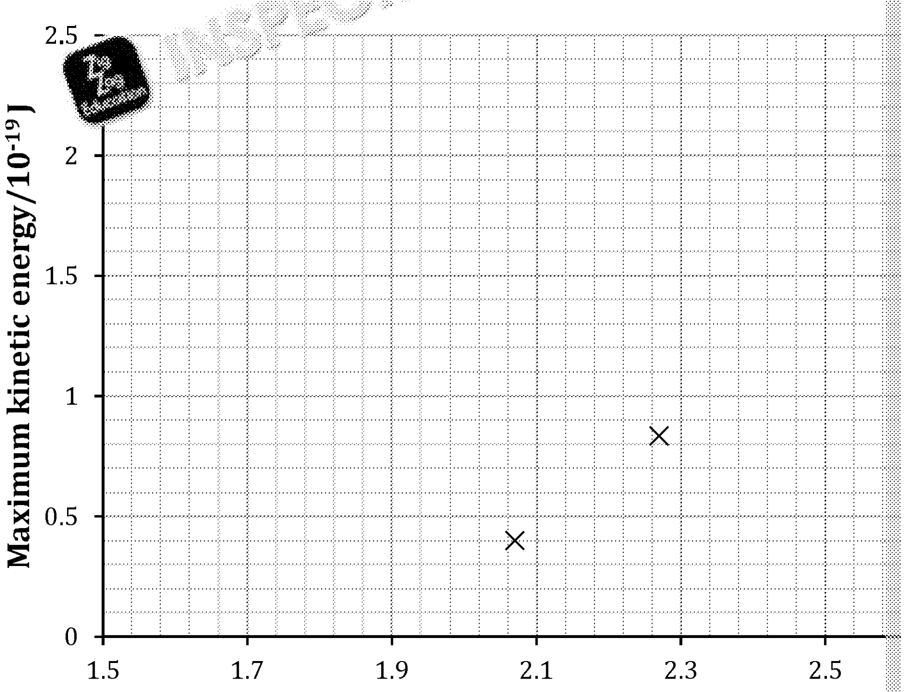

Fig. 18.2

(i) Complete the missing data point in Fig. 18.1.

(ii) Plot the missing point on Fig. 18.2 and draw a line of best fit thr

(iii) Calculate the gradient of the line.

(iv) Calculate the y-intercept of the line.

(v) Use your val… fi… the threshold frequency, f_0, and the work

Caesium has a work function of 1.9 eV.

(vi) Draw a line on Fig. 18.2 to represent the results which the scient caesium surface instead of sodium.

19 A capacitor of capacitance 600 μF is fully charged using a 12 V supply.

(a) **(i)** Calculate the energy, W_1, stored on the capacitor.

(ii) In what form is this energy stored?

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The charged capacitor is now connected in parallel across a second capa

(b) **(i)** Describe the movement of charge between the plates of the capa

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(ii) Calculate the energy, W_2, stored in the parallel combination.

(iii) Explain why W_1 and W_2 are different.

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20 Fig. 20 shows a large magnet with opposite poles a distance, *d*, apart.

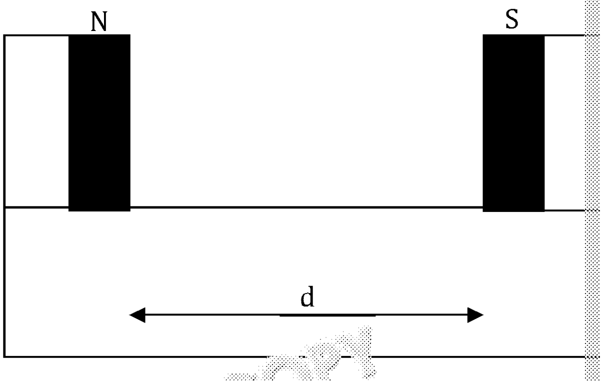

Fig. 20

(a) State Faraday's l

....

....

(b) On Fig. 20, draw three lines to represent the shape and direction of t
the poles.

(c) A circular coil of wire of diameter 2.0 cm is placed between the poles
The magnetic field strength between the poles is 3.6 T.

(i) Calculate the maximum flux linkage of the coil. Give the correct

Maximum flux linkage = ...

The coil is placed in this position of maximum flux linkage. It is then
magnetic field in a time of 2.0 ms.

(ii) Calculate the magnitude of the emf, ε, induced across the ends o

21 This question is about nuclear fusion.

(a) State and explain the conditions necessary for nuclear fusion to occu

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The symbol for deuterium is $^{2}_{1}H$.

(b) (i) Explain the meaning of the numbers 1 and 2 in this symbol.

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(ii) Explain why deuterium is an **isotope** of hydrogen.

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(c) Two deuterium nuclei can fuse together to form a helium nucleus:

$$^{2}_{1}\mathbf{H} + ^{2}_{1}\mathbf{H} \rightarrow ^{4}_{2}\mathbf{He} + \textbf{energy}$$

Mass of $^{2}_{1}H$ nucleus = 2.0136 u
Mass of $^{4}_{2}He$ nucleus = 4.0015 u

(i) Show that the mass defect in this reaction is approximately 0.02

(ii) Calculate the energy, E, in joules given out in each fusion reacti

(iii) Calculate the mass, m, of $^{2}_{1}H$ required to produce 1.0 kJ of energ

22 This question is about radioactive decay.

(a)* A freshly prepared radioactive isotope in the form of a solution emi
the isotope is between one minute and two minutes.

Describe how you could **safely** measure the half-life of the solution i
you could use a graphical analysis of your results to determine the h

(b) In beta minus decay, it appears that an electron is ejected from the n
the nucleus only contains protons and neutrons, explain how this is

(c) The isotope of uranium [illegible] $_{92}$U decays to an isotope of thorium, thoriu
alpha particle. The atomic symbol of thorium is Th.

(i) Write the nuclear equation for this decay.

The daughter nucleus thorium-229 is also radioactive. The whole u[illegible] involves many subsequent decays, each of which emits either an alp[illegible] The series finally ends with the stable isotope thorium-205.

(ii) Calculate the number of alpha particle decays which occur in th[illegible] uranium-233 to thorium-205.

[illegible] of alpha particle de[illegible]

(d) A sample of rock was for[illegible] 10^6 years ago.

The [illegible] originally contained 7.6×10^{15} nuclei of $^{233}_{92}U$.

Th[illegible]-life of $^{233}_{92}U$ is 1.6×10^5 years.

(i) Calculate the number, N, of $^{233}_{92}U$ nuclei remaining at the presen[illegible]

(ii) Hence calculate the current activity, A, of the rock sample.

(iii) Explain why uranium-233 is unsuitable for dating rocks from th[illegible] 4.6 billion years ago.

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23 **(a)*** When X-rays interact with matter, they do so via several different pr energy of their photons. Describe these attenuation mechanisms in of photon energies each is most significant. Explain clearly in each c incoming X-ray photon.

(b) Exp w ray photons used in radiotherapy have higher en in

END OF QUESTION PAPER

Preview of Questions Ends Here

Paper 2: Set 4 Mark scheme

Section A

1. C
2. C
3. A
4. C
5. D
6. A
7. C
8. D
9. C
10. B
11. D
12. B
13. A
14. C
15. B

Section B

Question			Answer	Marks	
16	**(a)***		**Level 3 (5–6 marks)** A clear description of all equipment required with a complete circuit diagram and a detailed description of the method used with more than one safety precaution. *The answer shows strong understanding and is in a reasonable order and structure. The answer includes appropriate details with evidence where applicable.* **Level 2 (3–4 marks)** A description of most of the equipment required with a circuit diagram plus a description of the method used with at least one safety precaution. *The answer shows some understanding and is ordered in a somewhat logical structure. The answer includes details that are largely appropriate, with some evidence where applicable.* **Level 1 (1–2 marks)** A description of some of the equipment required with an incomplete or incorrect circuit diagram and a limited description of the method used with one or no safety precautions. *The answer shows limited understanding and is unordered. The answer includes details and evidence that are inappropriate to the question.*	**B1 × 6**	Some inclu **Appa** 1. So w 2. Be 3. St 4. Th 5. Po 6. Sw 7. Th 8. Am 9. Vo 10. Co **Circu** 1. Po an 2. Vo th **Meth** 1. Im wa 2. He 3. Me th 4. Me 5. Ca 6. Re 7. Pl te **Safet** 1. En ke 2. Ke so 3. Ta wa wh be
16	**(b)**	**(i)**	$T^{-1} = 2.83\ (\times 10^{-3}\,\text{K}^{-1})$ $\ln(R/\text{k}\Omega) = 0.365$	**B1** **B1**	
		(ii)	Point plotted correctly to half a small square Line of best fit has even scatter on both sides	**B1** **B1**	

Question			Answer	Marks	
		(iii)	$R = Ae^{c/T}$ gives $\ln R = c \times 1/T + \ln A$ (Compare $y = mx + c$) c = gradient	B1 B1	
		(iv)	y-intercept = $\ln A$ so $A = e^{y\text{-intercept}}$ y-intercept (found correctly using a pair of values taken from the graph and $y = mx + c$) = -5.4 $\ln(A)$ = -5.4 (A in kΩ) so A in kΩ = $e^{-5.4}$ = 4.5×10^{-3} A = 4.5 unit Ω	C1 C1 A1 B1	 Accep Accep
			Total	**16**	
17	**(a)**		Coherent sources have a constant phase difference	B1	NOT
	(b)	(i)	Path difference = ½λ	B1	
		(ii)	Path difference = 82.0 – 80.6 = 1.4 cm = ½λ Hence $\lambda = 2.8 \times 10^{-2}$ (m) $c = f\lambda$ gives $f = c/\lambda = 3.0 \times 10^{8} / 2.8 \times 10^{-2}$ $f = 1.1 \times 10^{10}$ (Hz)	B1 B1 B1 B1	
	(c)	(i)	$\lambda = ax/D$ so a and x are inversely proportional (since D and λ remain constant) so OP would increase	M1 A1	
		(ii)	$c = f\lambda$ Increasing f would decrease λ $\lambda = ax/D$ so λ and x are directly proportional (since D and a remain constant) so OP would decrease	B1 M1 A1	
	(d)		One from: Do not place any part of the body in front of the microwave source Do not point the microwave source at anyone Do not place flammable material in front of the microwave source Turn off probe when moving it (or stand behind metal sheet)	B1	
			Total	**12**	
18	**(a)**	(i)	The <u>minimum</u> energy required to eject (photo)electrons from the <u>surface</u> of a metal	B1	
		(ii)	Each electron absorbs energy from one photon Photon energy is inversely proportional to wavelength / minimum photon energy corresponds to maximum wavelength	B1 B1	
		(iii)	(Less photon energy needed so) maximum λ increases	B1	
	(b)	(i)	$\lambda = hc/\Phi$ $= 6.63 \times 10^{-34} \times 3.00 \times 10^{8} / (4.3 \times 1.6 \times 10^{-19})$ $\lambda = 2.9 \times 10^{-7}$ (m)	C1 C1 A1	
		(ii)	UV/ultraviolet	B1	
		(iii)	$hc/\lambda = 6.63 \times 10^{-34} \times 3.00 \times 10^{8} / 2.00 \times 10^{-7}$ m $= 9.945 \times 10^{-19}$ J $= 9.945 \times 10^{-19}/1.6 \times 10^{-19}$ = 6.2 eV $KE_{MAX} = hc/\lambda - \Phi$ = 6.2 – 4.3 = 1.9 (eV)	C1 C1 A1	
			Total	**11**	

Question			Answer	Marks	
19	(a)	(i)	$Q = CV = 6800 \times 10^{-6} \times 12$ = 0.082 C = 82 (mC)	C1 A1	
		(ii)	Correct shape of graph Axes labelled correctly (charge on y-axis and time on x-axis) and 0.082 C marked as final charge	B1 B1	Corre
	(b)	(i)	Time constant is the time taken for the charge to fall to 1/e of its initial value	B1	Accep
		(ii)	$\tau = CR = 6800 \times 10^{-6} \times 2.2 \times 10^3$ = 14.9 (s)	C1 A0	
		(iii)	$Q = Q_0 e^{-t/\tau}$ $= 0.082 \times e^{-(5.0/15)}$ = 0.059 (C) / 59 mC	C1 C1 A1	 ECF
		(iv)	Energy at 0 s = $\frac{1}{2}CV^2 = \frac{1}{2} \times 6800 \times 10^{-6} \times 12^2$ = 0.49 J Energy at 5.0 s = $\frac{1}{2}Q^2 / C = \frac{1}{2} \times 0.059^2 / 6800 \times 10^{-6}$ = 0.26 J Loss in energy = 0.23 (J)	 C1 C1 A1	 Accep Accep
		(v)	(Electrical energy) converted into heat energy in <u>wires</u> (and resistor)	B1	Not s 'dissi Accep resis
			Total	**13**	
20	(a)		Arrow(s) show(s) field going in an anticlockwise direction	B1	
	(b)	(i)	At least three pairs of results tested Value of $B \times d^2$ calculated <u>correctly</u> Inverse square relationship is **not** valid, as $B \times d^2 \neq$ constant	B1 M1 A1	 0.62 0.29 × 0.21 0.16 × Accep $\sqrt{B}d$
		(ii)	Flux linkage = NBA $= 150 \times 6.2 \times 10^{-7} \times 3.2 \times 10^{-2}$ Flux linkage = 3.0×10^{-6} (Wb)	C1 C1 A1	 Penal penal
		(iii)	Time taken = (0.8 − 0.2)/0.5 = 1.2 s Change in B = (0.62 − 0.16) μT = 0.46 μT $E = NA\Delta B/\Delta t$ $= 150 \times 3.2 \times 10^{-2} \times 0.46 \times 10^{-6} / 1.2$ $= 1.8 \times 10^{-6}$ (V)	C1 C1 C1 A1	
			Total	**11**	

Question			Answer	Marks	
21	**(a)**		Activity is the <u>average</u> number of decays per unit time	**B1**	
	(b)		Starts at (0, 48) (1.8, 24), (3.6, 12), (5.4, 6), (7.2, 3), (9.0, 1.5) plotted Points joined with a <u>smooth curve</u> which continues to at least $t = 9.0 \times 10^{11}$ s	**B1** **B1** **B1** **B1**	
	(c)	**(i)**	$\lambda = \ln 2/t_{½} = \ln 2 / 1.8 \times 10^{11}$ $= 3.9 \times 10^{-12}$ (s^{-1})	**C1** **A1**	
		(ii)	$A_0 = \lambda N_0$ gives $N_0 = A_0/\lambda = 48 \times 10^6/3.9$ [illegible] $= 1.2 \times 10^{19}$	**C1** **A1**	1.25 [illegible]
		(iii)	4,000 years = 4 × [illegible] × $10^7 = 1.26 \times 10^{11}$s $N = N_0$ e[illegible] N = [illegible] $10^{19} \times e^{-(3.9\times10^{-12}\times1.26\times10^{11})}$ [illegible] $= 7.6 \times 10^{18}$	**C1** **C1** **C1** **A1**	 ECF [illegible] 7.5 × [illegible]
	(d)		Living organisms absorb carbon Ratio of carbon-14 to carbon-12 decreases with time once an organism has died Compare ratio in dead sample to that in living sample	**B1** **B1** **B1**	
			Total	**16**	

Question	Answer	Marks	
22*	**Level 3 (5–6 marks)** A clear description of how ultrasound imaging is used in medicine, with both A and B scans and Doppler imaging mentioned. Answer includes a clear description of ultrasound production and detection plus several points clearly made about the advantages and disadvantages of its use. *The answer shows strong understanding and is in a reasonable order and structure. The answer includes appropriate details with evidence where applicable.* **Level 2 (3–4 marks)** A description of how ultrasound imaging is used in medicine, including a description of ultrasound production and detection plus at least one advantage and one disadvantage. *The answer shows some understanding and is ordered in a somewhat logical structure. The answer includes details that are largely appropriate, with some evidence where applicable.* **Level 1 (1–2 marks)** A limited description of how ultrasound imaging is used in medicine, with a sketchy description of ultrasound production and detection plus one advantage or disadvantage. *The answer shows limited understanding and is unordered. The answer includes details and evidence that are inappropriate to the question.*	B1 × 6	Exam **Gene** 1. U fr 2. At 3. Fo be 4. Us **Uses** 1. A 2. V m 3. B 4. Pr m 5. D ti 6. Er in 7. D bl **Prod** 1. U 2. Pi 3. su 4. Al p 5. Da **Dete** 1. Pi 2. U e **Adva** 1. N 2. N 3. Q 4. Pa 5. Pr 6. Lo 7. Po **Disa** 1. Lo to 2. Ca ti
		Total	6

Preview of Answers Ends Here