TEST2-AQA-8464P2H-QP-JUN25 - Student Feedback (Direct Instruction)

Student: Test User

Overall Score: 33/70 (47.1%)
Grade: 6-6
Grade boundaries: Grade boundaries 2024-26 · AQA · Higher
Assessment Tier: Higher

Performance Summary

The student achieved an overall score of 33 out of 70 marks (47.1%), which corresponds to Grade 4 (Weak Pass). 27 out of 27 questions were marked. This indicates that fundamental concepts need strengthening, and additional support would be beneficial for future assessments. Areas for development should focus on building foundation knowledge and basic problem-solving skills.

AI Study Review
Scan this QR code to load your full exam data into an AI chatbot (ChatGPT, Claude, or Gemini) for personalised revision help.

Q No.	Topic	Subtopic path	Spec	SPARX	Page	Marks	Max	Marked
1.1	Forces	Forces and motion > Speed	6.5.6.1.2	–	2	1	1	✓
1.2	Forces	Forces and motion > Speed	6.5.6.1.2	–	3	3	3	✓
1.3	Forces	Forces and elasticity > Resultant forces	6.5.1.4	–	3	2	2	✓
1.4	Forces	Forces and motion > The distance-time relationship	6.5.6.1.4	–	4	0	1	✓
1.5	Forces	Forces and motion > Newton's First Law	6.5.6.2.1	–	5	1	1	✓
1.6	Forces	Forces and motion > Newton's Third Law	6.5.6.2.3	–	5	0	1	✓
2.1	Forces	Forces and motion > Acceleration	6.5.6.1.5	–	6	1	3	✓
2.2	Forces	Forces and motion > Stopping distance	6.5.6.3.1, 6.5.6.3.3, 6.5.6.3.2	–	7	1	6	✓
2.3	Forces	Forces and motion > Factors affecting braking distance 2	6.5.6.3.4	–	8	0	3	✓
3.1	Waves	Waves in air, fluids and solids > Transverse and longitudinal waves	6.6.1.1	–	9	0	2	✓
3.2	Waves	Electromagnetic waves > Properties of electromagnetic waves 2	6.6.2.3	–	9	0	1	✓
3.3	Waves	Electromagnetic waves > Types of electromagnetic waves	6.6.2.1	–	9	1	1	✓
3.4	Waves	Waves in air, fluids and solids > Properties of waves	6.6.1.2	–	10	3	4	✓
3.5	Waves	Electromagnetic waves > Properties of electromagnetic waves 1	6.6.2.2	–	11	2	2	✓
3.6	Waves	Electromagnetic waves > Properties of electromagnetic waves 1	6.6.2.2	–	12	0	2	✓
4.1	Magnetism and electromagnetism	The motor effect > Electromagnetism	6.7.2.1	–	14	1	2	✓
4.2	Magnetism and electromagnetism	The motor effect > Fleming's left-hand rule (HT only)	6.7.2.2	–	15	1	5	✓
4.3	Magnetism and electromagnetism	The motor effect > Electric motors (HT only)	6.7.2.3	–	16,17	0	5	✓
5.1	Waves	Black body radiation (physics only) > Emission and absorption of infrared radiation	6.6.3.1	–	19	0	1	✓
5.2	Waves	Black body radiation (physics only) > Emission and absorption of infrared radiation	6.6.3.1	–	19	0	2	✓
5.3	Waves	Black body radiation (physics only) > Emission and absorption of infrared radiation	6.6.3.1	–	21	4	4	✓
5.4	Waves	Black body radiation (physics only) > Emission and absorption of infrared radiation	6.6.3.1	–	22	3	3	✓
5.5	Waves	Black body radiation (physics only) > Emission and absorption of infrared radiation	6.6.3.1	–	23	2	4	✓
6.1	Forces	Forces and motion > Speed	6.5.6.1.2	–	24	1	1	✓
6.2	Forces	Forces and motion > Acceleration	6.5.6.1.5, 6.1.1.2	–	25	5	6	✓
6.3	Forces	Forces and motion > Velocity	6.5.6.1.3	–	26	1	2	✓
6.4	Forces	Forces and motion > Acceleration	6.5.6.1.5	–	27	0	2	✓

Q No.	Topic	Subtopic path	Spec	SPARX	Page	Marks	Max	Marked
TOTAL	-	-	-	-	–	33	70	27/27

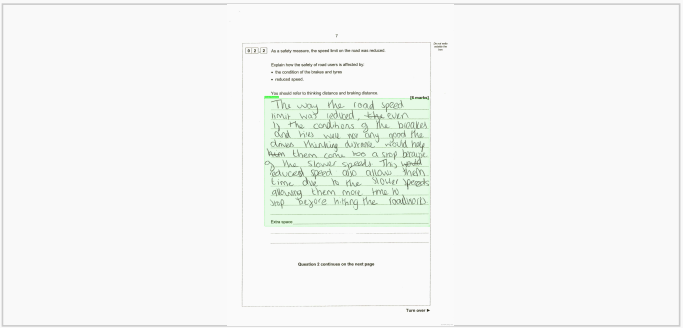
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Areas for Improvement (6 questions)

Q2.2 — 1/6

Forces > Forces and motion > Stopping distance | 6.5.6.3.1, 6.5.6.3.3, 6.5.6.3.2

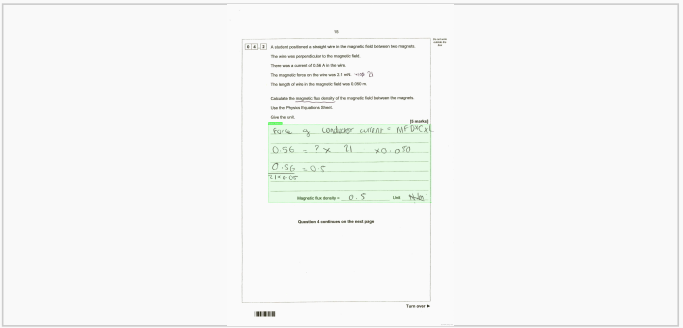


✓ **AO2**: Level 1 (1 mark): Points are identified and stated simply, but relevance is not clear and there is no logical linking.
Identified that speed was reduced and linked it simply to "allowing them more time to stop".
Mentioned "conditions of the breakes and tires" and "thinking distance", though without explaining their scientific effect.

- State clearly that poor brake and tyre condition reduces friction and increases braking distance.
- Explain that decreased speed decreases both thinking distance and braking distance.
- Link a shorter stopping distance to safety by stating it reduces the chance of collision or injury.

Q4.2 — 1/5

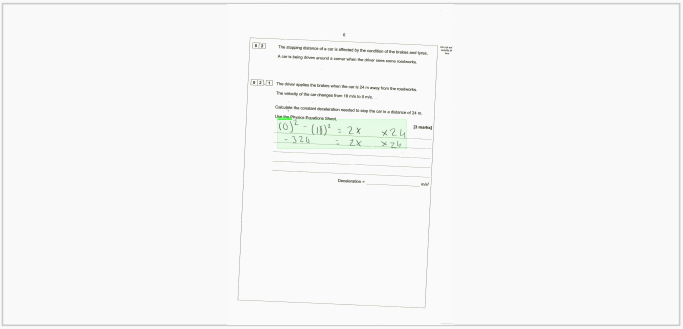
Magnetism and electromagnetism > The motor effect > Fleming's left-hand rule (HT only) | 6.7.2.2



✗ **AO2.1**: Converting millinewtons to newtons required dividing by 1000 to get $0.0021\ \text{N}$, but 21 was used instead.
✗ **AO2.2**: Correct substitution into $F = B \times I \times L$ requires placing the force on the left ($0.0021 = B \times 0.56 \times 0.050$), but the current ($0.56\ \text{A}$) was placed as the force.
✓ **AO2.3**: The response correctly rearranged the substituted values to isolate magnetic flux density by dividing by the product of the other two terms ($B = \frac{0.56}{21 \times 0.05}$).
✗ **AO2.4**: The final value should evaluate to 0.075 (or 0.53 via error carried forward), but 0.5 was given from $\frac{0.56}{1.05}$.
✗ **AO1**: The unit required was tesla or T, but the attempted unit was crossed out leaving no answer.

Q2.1 — 1/3

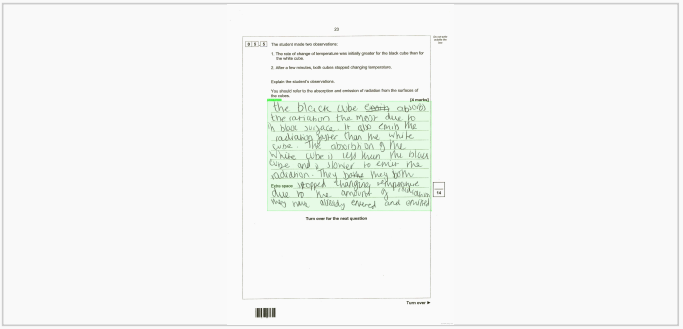
Forces > Forces and motion > Acceleration | 6.5.6.1.5



✓ **AO2.1**: Correct substitution of the values into $v^2 - u^2 = 2as$ as $(0)^2 - (18)^2 = 2x \times 24$.
✗ **AO2.2**: The equation was simplified to $-324 = 2x \times 24$ but was not rearranged to make acceleration the subject ($a = \frac{-324}{2 \times 24}$).
✗ **AO2.3**: No final calculated value of 6.75 m/s² (or -6.75 m/s²) was provided.

Q5.5 — 2/4

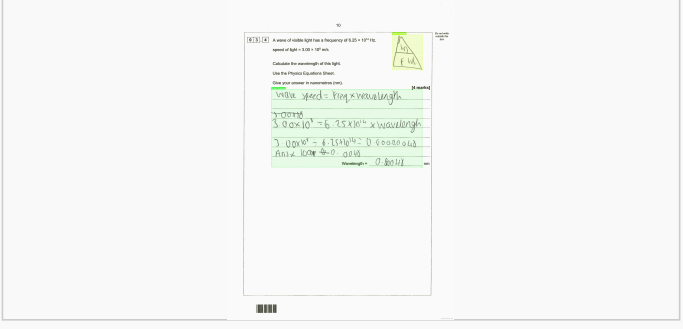
Waves > Black body radiation (physics only) > Emission and absorption of infrared radiation | 6.6.3.1



✓ **AO1.1**: You correctly stated that the black surface is a good absorber of radiation by noting it 'absorbs the radiation the most due to its black surface'.
✓ **AO1.2**: You correctly identified that the white surface is a poor absorber by stating 'The absorbtion of the white cube is less than the black cube'.
✗ **AO1.3**: The mark requires explaining that as the temperature of the cubes increases, they emit radiation at a greater rate. As a next step, state that as each cube gets hotter, the rate at which it emits radiation increases.
✗ **AO1.4**: The mark requires stating that at constant temperature, each cube emits radiation at the same rate that it absorbs radiation. You wrote that they stopped changing temperature 'due to the amount of radiation they have already entered and emitted', which does not state that the rate of emission equals the rate of absorption. As a next step, explain that constant temperature is reached when the rate of emission equals the rate of absorption.

Q3.4 — 3/4

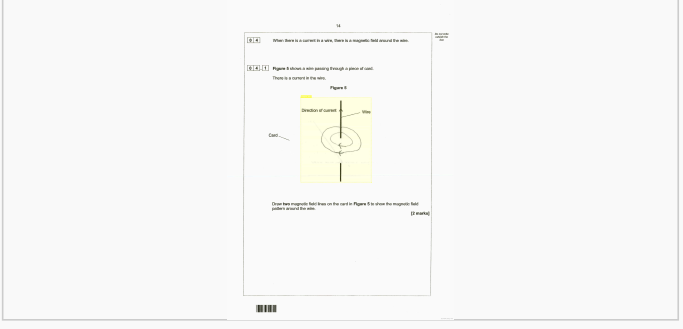
Waves > Waves in air, fluids and solids > Properties of waves | 6.6.1.2



✓ **AO2.1**: Correct substitution of the values from the question into the wave equation $v = f\lambda$ as $3.00 \times 10^8 = 6.25 \times 10^{14} \times \text{wavelength}$.

Q4.1 — 1/2

Magnetism and electromagnetism > The motor effect > Electromagnetism | 6.7.2.1



✓ **AO1.1**: Two concentric circles have been correctly drawn around the wire. This earns the mark for '(at least) 2 concentric rings around the point where the wire passes through the card'.

✓ **AO2.2**: Correct rearrangement of the equation to calculate wavelength: $\lambda = \frac{3.00\times10^{8}}{6.25\times10^{14}}$.

✓ **AO2.3**: Correct calculation of wavelength in metres as $0.00000048\ \text{m}$ (equivalent to $4.80 \times 10^{-7}\ \text{m}$).

✗ **AO2.4**: The student multiplied by 1000 to get 0.0048, confusing nanometres with micrometres or millimetres. To convert from metres to nanometres, multiply by 10^{9} (or divide by 10^{-9}) to give $480\ \text{nm}$.

✗ **AO1.2**: The arrows drawn on the front part of the circles point to the left, indicating a clockwise direction, so this mark is not awarded. The mark scheme requires 'arrow(s) drawn in anticlockwise direction around the wire'. To earn this mark, the arrows should point to the right on the front part of the circles, which matches the anticlockwise magnetic field produced by an upward current according to the right-hand grip rule.

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