

YEAR 2 | MODULE 6 | PACK 04

Gravitational and magnetic-field links

Official past-paper mark scheme

2017-2023 | OCR A H556 | 6.2.2(c)-(d); applications with 5.4 and 6.3

9 marks | 3 question entries

Later applications - use after the required topics

Match each extract using its question number and stable EF identifier. Original OCR answers, examiner guidance, alternatives, diagrams and level descriptors are preserved.

The heading gives the maximum marks for the assigned subparts. Alternative methods and "any n from" lists offer routes to those marks; do not add every printed point together.

Click a source reference to open OCR's full official mark scheme. Keep this file closed while attempting the questions.

Sources: the 2024 and 2025 exams are not used in these topic packs. These files contain official examination questions only; no sample, specimen or practice papers.

Question index

EF identifiers are stable across the question packs and mark schemes; Q numbers refer to this pack. All MCQs appear first.

Question / source

Marks Page

Q01 | EF16

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June 2022 | H556/02 | Q15

Q02 | EF17

1 3

June 2017 | H556/02 | Q13

Q03 | EF18

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June 2017 | H556/03 | Q2(a)-(b)

Q01 | EF16**1 mark**

June 2022 | H556/02 | Q15

Question	Answer	Marks	Guidance
15	B	1	

Q02 | EF17**1 mark**

June 2017 | H556/02 | Q13

Question	Answer	Marks	Guidance
13	D	1	

Q03 | EF18

7 marks

June 2017 | H556/03 | Q2(a)-(b)

Question			Answer	Marks	Guidance
2	(		$F = Bev$ and $F = eE$ $E = V/a$ or $F = (eE) = eV/a$ $Bev = eV/a$ giving $V = Bva$	B1 B1 B1	allow Q or q for e
	(b)	(i)	$I = nAev$; $v = 60 \times 10^{-3} / 1.2 \times 10^{23} \times 1.6 \times 10^{-19} \times 5.0 \times 0.2 \times 10^{-6}$ $v = 3.1 \text{ (m s}^{-1}\text{)}$	C1 C1 A1	allow any subject
		(ii)	$V = 80 \times 10^{-3} \times 3.1 \times 5.0 \times 10^{-3} = 1.2 \times 10^{-3} \text{ (V)}$	A1	ecf (b)(i); allow 1.2 mV; $1.3 \times 10^{-3} \text{ (V)}$