Q1. (2018)

08.1	1st box ticked		1	AO1 6.7.1.2	

Q2. (2018)

08.2	(permanent magnet) has no effect on the aluminium		1	AO2 6.7.1.1 6.7.1.2	
	iron is attracted (to the permanent magnet)		1		
	(only) the (permanent) magnet can be repelled (by the permanent magnet)		1		

Q3. (2019)

01.2	D		1	AO2 6.7.1.1	A

Q4. (2019)

01.3	bring two unlike poles close together	allow north and south poles allow opposite poles	1	AO1 6.7.1.1	E
	bring two like poles close together	allow two north / south poles allow N for north and S for south	1		

Q5. (2019)

a)

01.4	induced magnetism		1	AO1 6.7.1.1	A

b)

01.5	all 4 poles correctly labelled north and south	allow N for north and S for south allow 1 mark for 2 or 3 correctly labelled poles	2	AO3 6.7.1.1	E

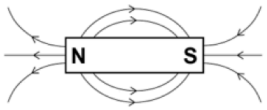
Q6. (2020)

06.1	iron and steel will be attracted (to the magnet)		1	AO1 6.7.1.1	
	aluminium, copper and tin will not be attracted (to the magnet)	allow **1** mark is one metal is in the incorrect list, but all the other four are correct if no other mark awarded allow iron and steel are magnetic for **1** mark	1		

Q7. (2020)

06.2	the paperclip would still be attracted to the magnet because of induced magnetism	 allow the paper clip becomes an induced magnet allow because the paper clip is a temporary magnet allow there is a magnetic field at the south pole	1 1	AO1 6.7.1.1

Q8. (2021)

02.1	first box ticked  		1	AO1 6.7.1.2

Q9. (2022)

a)

04.1	the Earth has a magnetic field		1	AO2 6.7.1.2

b)

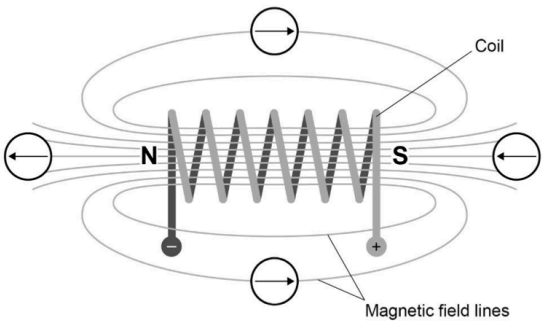
04.2	steel		1	AO1 6.7.1.2

Q10. (2022)

a)

04.3	the field is strongest at the ends of the coil		1	AO1 6.7.2.1

b)

04.4	all arrows in the correct direction  allow **1** mark for 2 or 3 arrows in the correct direction		2	AO2 6.7.2.1

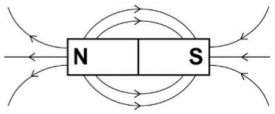
c)

04.5	any **two** from: • increase the current • insert an iron core • increase the number of turns	 allow increase potential difference allow turns closer together	2	AO1 6.7.2.1

Q11. (2023)

03.1	iron is magnetic		1	AO1 6.7.1.2

Q12. (2023)

03.2	correct pattern of field lines arrows on field lines away from N and towards S  		1 1	AO1 6.7.1.2

Q13. (2023)

03.3	they are opposite poles		1	AO3 6.7.1.1

Q14. (2023)

03.4	they line up with the Earth's magnetic field	allow they all point north	1	AO3 6.7.1.2

Q15. (2024)

a)

04.1	X = south Y = north	allow S for south allow N for north allow **1** mark if they are the wrong way round	1 1	AO2 6.7.1.1

b)

04.2	→		1	AO1 6.7.1.2

Q16. (2024)

a)

04.3	iron nickel		1 1	AO1 6.7.1.2

b)

04.4	the force is always attractive		1	AO3 6.7.1.2

c)

04.5	$F = 0.030 \times 9.8$ 0.294 (N)	 allow 0.29 (N)	1 1	AO1 6.5.4.2.2