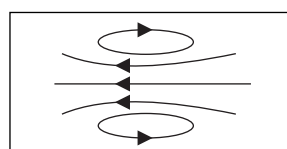
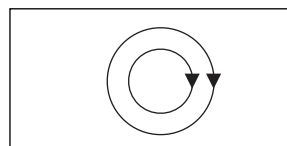


4. (a) An electric current produces a magnetic field.
Draw a line from each box to its correct magnetic field pattern.

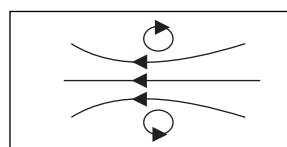
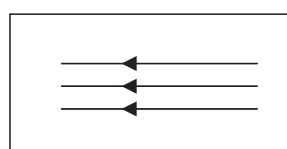
current in a
straight wire



current in a flat
circular coil

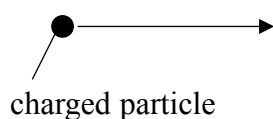


current in a
solenoid

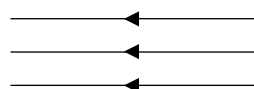


(3)

- (b) A charged particle travels towards and enters a magnetic field.



charged particle



magnetic field

- (i) Describe the magnetic force acting on the charged particle when it is moving in the magnetic field.

.....
(1)

- (ii) Explain your answer.

.....
(1)

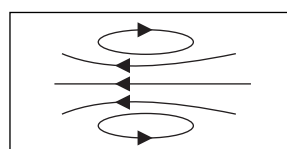
Q4

(Total 5 marks)

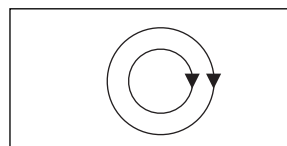


4. (a) An electric current produces a magnetic field.
Draw a line from each box to its correct magnetic field pattern.

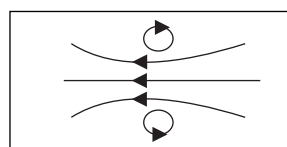
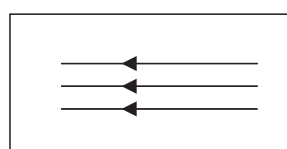
current in a
straight wire



current in a flat
circular coil

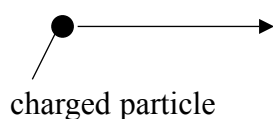


current in a
solenoid

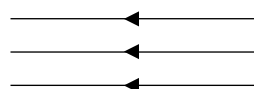


(3)

- (b) A charged particle travels towards and enters a magnetic field.



charged particle



magnetic field

- (i) Describe the magnetic force acting on the charged particle when it is moving in the magnetic field.

.....
(1)

- (ii) Explain your answer.

.....
(1)

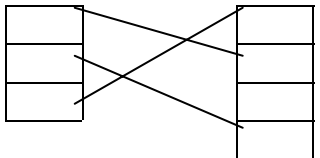
Q4

(Total 5 marks)



(b) 2.9 (cm)	2.8 - 3.0 cm read from graph \pm half small square	1
(c) not linear relationship for large loads OWTTE	beyond elastic limit	1
(d) (helical) spring	allow (metal) wire	1
(i)		
(d) straight region indicates wire or spring (1)	any other reason why it might be spring/wire	
(ii)		
curved line would be seen for rubber band (1)	any reason why it isn't rubber band	
extension too great for wire (1)	reason why it isn't wire	
<i>not allowed if answered wire in(i)</i>		
	Maximum	2
	Total 8 marks	

Question 4

(a)		3
(b) none/zero		1
(i)		
(b) particle moving parallel to the field(lines)		1
(ii)		
	Total 5 marks	

Question 5

(a) light to		1
electrical		1
(b) 6000 / 120	6000 / 2 = 3000	1
(i) = 50(W)	scores 1	1
(b) 1 mark each for any two		
(ii)		
rays change angle of incidence at roof (1)		
clouds/weather conditions (1)		
no sun at night (1)		
	Maximum	2
	Total 6 marks	