

Name of the Student: _____

Max. Marks : 21 Marks

Time : 21 Minutes

Mark Schemes

Q1.

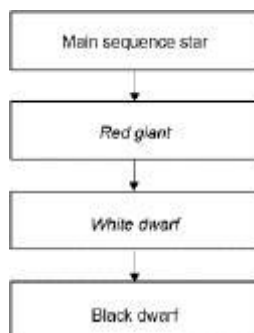
(a) $g = \frac{750}{2.5}$ 1

$g = 300.0 \text{ (N/kg)}$ 1

(b) electrostatic 1

(c) red giant
this order only 1

white dwarf



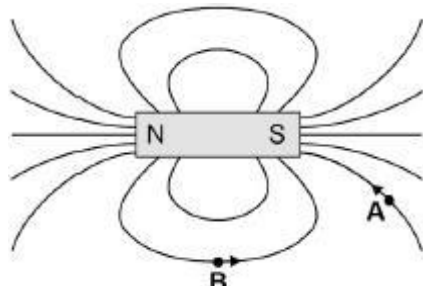
(d) Z
reason only scores if Z chosen 1

only stars about the same/smaller size/mass as the Sun become Black dwarfs
allow converse 1

(e) supernova 1

[8]**Q2.**

(a) both arrows correct

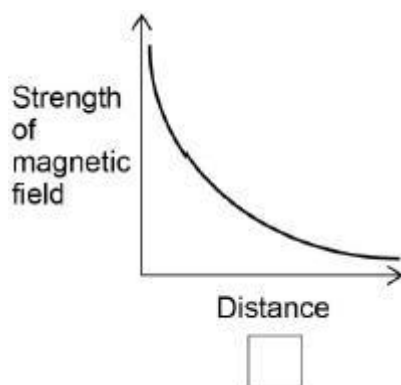


1

(b) a permanent magnet

1

(c) third box ticked



1

any **one** from

- (the only graph) that shows the magnetic field getting weaker (as distance increases)
- both other graphs show the magnetic field getting stronger (as the distance increases)

only scores if correct box is chosen

1

(d) steel cans are attracted to the electromagnet and are transferred to the container (by the conveyor belt)

1

aluminium cans are not attracted to the electromagnet and are left behind on the table

If no other mark scored: Steel cans are attracted (to the electromagnet) but aluminium cans are not – scores one mark

1

(e) raise the height of the table

allow longer legs on the table

allow put a (non-magnetic) box on top of the table

allow lower the electromagnet

1

use a larger potential difference / current

or

use a stronger electromagnet

allow more turns on the coil (of the electromagnet)

*do **not** accept insert a (soft) iron core*

1

(f) distance travelled = speed \times time

or

$$s = v t$$

1

(g) $3.3 = 1.7 \times t$

1

$$t = \frac{3.3}{1.7}$$

1

$$t = 1.941 \text{ (s)}$$

1

$$t = 1.9 \text{ (s)}$$

*allow a calculation using the given data incorrectly but
correctly rounded to 2 sig figs*

1

[13]