M1.D

[1]

M2.D

[1]

M3.A

[1]

M4.C

[1]

M5.B

[1]

M6.D

[1]

M7.A

[1]

M8.D

[1]

M9.B

[1]

M10.D

[1]

M11.C

[1]

M12.   B

[1]

M13. (i) C

B1

1

(ii) B

B1

1

[2]

M14. C

[1]

M15.   (a)   the (total) energy transferred/work done when
one unit/coulomb of charge

B1

is moved around a circuit/provided by the supply

B1

2

(b)   work is done inside the battery/there is resistance
inside the battery

B1

so less energy is available for the external circuit/someoltage
is lost between the terminal/mention of lost volts

B1

2

(c)   (i)   9.00 V

c.a.o.

B1

(ii)   lost voltage = E - V or E = I(R + r)

C1

0.82r = 0.59

C1

5

internal resistance = 0.720 Ω

A1

(iii)   because the battery has to provide more energy/power

B1

[9]

M16.C

[1]

M17.B

[1]

M18.A

[1]

M19.A

[1]

M20.C

[1]

M21.D

[1]

M22.B

[1]

M23.C

[1]

M24.B

[1]

M25.A

[1]

M26.C

[1]