Use of SI Units; Prefixes

Question Paper

Level	A Level
Subject	Physics
Exam Board	AQA
Topic	Measurements and their errors
Sub Topic	Use of SI units; prefixes
Booklet	Question Paper
Paper type	Multiple choice

Time Allowed: 15 **minutes**

Score: **/12**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	77.5%	70%	62.5%	57.5%	45%	<45%

Q1. In which of the following do both quantities have the same unit?

A Electrical resistivity and electrical resistance.

B Work function Planck constant

C Pressure and the Young modulus.

D Acceleration and rate of change of momentum.

(Total 1 mark)

Q2. Which of the following is **not** a unit of power?

A $N\ m\ s^{-1}$

B $kg\ m^2\ s^{-3}$

C $J\ s^{-1}$

D $kg\ m^{-1}\ s^{-1}$

(Total 1 mark)

Q3. Which of the following gives a correct unit for $\left(\frac{g^2}{G}\right)$?

A N

B N kg^{-1}

C N m

D N m^{-2}

(Total 1 mark)

Q4. Which one of the following is a possible unit of impulse?

A Ns^{-1}

B kg ms^{-1}

C kg ms^{-2}

D sN^{-1}

(Total 1 mark)

Q5. Which one of the following gives a correct unit for $\left(\frac{g}{G}\right)^2$?

A N m^{-2}

B N kg^{-1}

C N m

D N

(Total 1 mark)

Q6. Which one of the following **cannot** be used as a unit for electric field strength?

A J m^{-1} C^{-1}

B J A^{-1} $s^{-1}m^{-1}$

C N A^{-1} s^{-1}

D J C m^{-1}

(Total 1 mark)

Q7. Which of the following is a possible unit for rate of change of momentum?

A N s

B N s^{-1}

C kg ms^{-1}

D kg ms^{-2}

(Total 1 mark)

Q8. Which one of the following could be a unit of gravitational potential?

A N

B J

C N kg^{-1}

D J kg^{-1}

(Total 1 mark)

Q9. In parts (i) and (ii) circle the letter that corresponds to the correct answer.

(i) The resistance of a negative temperature coefficient (ntc) thermistor

A increases as temperature increases.

B is constant at temperatures below 0 °C.

C increases as temperature decreases.

D falls to zero when a critical temperature is reached.

(1)

(ii) The unit of potential difference can be expressed as

A C s^{-1}

B J C^{-1}

C V A^{-1}

D J A^{-1}

(1)
(Total 2 marks)

Q10. The fission of one nucleus of uranium 235 releases 200 MeV of energy. What is the value of this energy in J?

A 3.2×10^{-25} J

B 3.2×10^{-17} J

C 3.2×10^{-11} J

D 2.0×10^{6} J

(Total 1 mark)

Q11. Which line, **A** to **D**, gives correct units for both magnetic flux and magnetic flux density?

	magnetic flux	magnetic flux density
A	Wb m^{-2}	Wb
B	Wb	T
C	Wb m^{-2}	T m^{-2}
D	T m^{-2}	Wb m^{-2}

(Total 1 mark)