

Useful Constants and Equations

The following useful equation may be unfamiliar to some students:

$$\rho = \frac{m}{V} \quad \text{density} = \text{mass} \div \text{volume}$$

$$c = f \times \lambda \quad \text{wave speed} = \text{frequency} \times \text{wavelength}$$

$$p \times V = \text{constant} \quad \text{pressure} \times \text{Volume} = \text{constant}$$

for an ideal gas at a constant temperature

$$\frac{1}{2}mv^2 \quad \text{kinetic energy}$$

$$mgh \quad \text{gravitational potential energy}$$

$$P = V \times I$$

The following constants should be used

$$g = 9.8 \text{ N/kg} \quad \text{gravitational field strength on Earth}$$

Question 12

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Section C: Extended numerical questions (30 marks)

Question 13

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