



**Applied General Science
(TVQ01028, TVQ01029) formulae**

For use in exams from the January 2017 series onwards

BIOLOGY

- **Magnification = $\frac{\text{observed size}}{\text{actual size}}$**

CHEMISTRY

- **moles = $\frac{\text{mass}}{M_r}$**
- **PV = nRT**
- **Q = mcΔT**
- **moles = vol (dm³) × concentration (mol dm⁻³)**

PHYSICS

Energy and Efficiency

- **efficiency = $\frac{\text{useful energy (or power) output}}{\text{total energy (or power) input}}$**
- **U = $\frac{Q}{At \Delta T}$**

[Turn over]

ELECTRICITY AND CIRCUITS

- $I = Q/t$
- $P = IV$
- $I = V/R$
- rate of heat loss = I^2R
- $R_{\text{total}} = R_1 + R_2 + R_3$
- $1/R_{\text{total}} = 1/R_1 + 1/R_2 + 1/R_3$

DYNAMICS

- $F = ma$
- $p = mv$
- $F = \Delta p/t$
- (average) $v = s/t$
- $v = u + at$
- $v^2 = u^2 + 2as$
- $s = ut + \frac{1}{2} at^2$
- $GPE = mgh$
- $KE = \frac{1}{2} mv^2$
- $P = E/t$
- weight = mg