

## Newton's Laws of Motion - II: Answers to Subjective Questions (Typical)

A-01	$10\text{m/s}^2$
A-02	(a) 2 sec      (b) $7\sqrt{2}\text{m}$ , $8\sqrt{2}\text{m}$
A-03	$F = 60\text{N}$ , $T = 18\text{N}$ and $a = \frac{3}{5} \text{m}\cdot\text{s}^{-2}$
A-04	(a) 36N    (b) $11.75\text{rad}\cdot\text{s}^{-1}$ (c) 0.1m    0.2m
A-05	(a) FBD is shown in illustration    (b) $\frac{5\sqrt{3}}{8}g \text{ m} \cdot \text{s}^{-2}$ $\frac{3}{8}mg \text{ N}$
A-06	(a) $h = (r - \frac{g}{\omega^2}) \text{ m}$ (b) $\omega > \sqrt{\frac{g}{r}} = 9.89 \text{ rad}\cdot\text{s}^{-1}$
A-07	(a) $m = 10 \text{ kg}$ (b) 0.098 J
A-08	$V_C = V_F = \sqrt{2g(y - \mu x)}$
A-09	(a) $\theta = 30^\circ$ (b) 108.25 m, 31.25 m
A-10	Answer is $3.4 \text{ m}\cdot\text{s}^{-1}$