

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Foundation Physics

Subject Code : CCN1108

Session : Semester One, 2017/18

Numerical Answers

Question B1

- (a)(i) $T = 6.83 \text{ N}$
- (a)(ii) $F = 8.67 \text{ N}$
- (b) $N = 17.3 \text{ N}$

Question B2

- (a) $N = 5.51 \times 10^{22}$
- (b) $F = 0.11 \text{ N}$
- (d) $V = 400 \text{ V}$

Question B3

- (c) $v = 150 \text{ ms}^{-1}$

Question B4

- (a)(i) $I_R = 1.5 \text{ A}; V_R = 10 \text{ V}$
- (a)(ii) $R = 6.67 \Omega$

Question C1

- (a)(i) $h = 5.01 \text{ m}$

Question C2

- (b) $F/l = 2.21 \times 10^{-5} \text{ N/m}; \text{ total force} = 1.77 \times 10^{-6} \text{ N}$

Question C3

- (a) $v = 11 \text{ ms}^{-1}; \lambda = 2.89 \text{ m}$
- (b) $f = 6000 \text{ Hz}$
- (c) $f = 3400 \text{ Hz}$
- (d) $f = 1230 \text{ Hz}$

Question C4

- (a) $F = 0.0336 \text{ N}$
- (b) $T_f = 15.1 \text{ }^\circ\text{C}$
- (c) Total cost = \$ 74.8
- (d) $x = 438$
- (e) $Q = -329 \text{ J}$