Pearson Longman

HKDSE Essentials: Physics Exam Exercises
Electricity and Magnetism

Updated on 3 Jan, 2013.

Amendments (main book):

Tips

Tips p.4 #2	E	READS	E_2
Tips p.7 #1	anticlockwise	READS	clockwise

E1

E1 p.20 ans #32	C	READS	A
E1 p.23 ans #1b(ii)	$\sqrt{3}q/(16\pi\varepsilon_0 d^2)$	READS	$q/(16\pi\varepsilon_0 d^2)$
E1 p.24 #3b	1 gram	READS	0.4 gram
E1 p.25 #6	$1/xn$	READS	$1/x^n$

E2

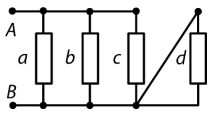
E2 P.33 #16 Fig.	The resistance of the bottom left resistor is R.		
E2 p.34 ans #23	D	READS	C
E2 p.40 ans #8	C	READS	B

Amendments (solution guide):

E1

E1 p.3 #28	100 should read 10.
E1 p.3 #32	The answer should be A.
E1 p.4 #40(3)	X is at a higher φ. Note that a negative charge has a negative potential energy.
E1 p.6 #1b(ii)	So, $E = E_X \cos 60° + E_Y \cos 60° = q/(16\pi\varepsilon_0 d^2)$.
E1 p.6 #3b last line	The mass of 2% electrons is 0.00038 kg ≈ 0.4 g.
E1 p.8 #12	The answer should be A. Interchange '(3)' and '(2)'.

E2

E2 p.10 #18 Fig.	The circuit diagram should be: 
E2 p.10 #23	The answer should be C.
E2 p.13 #5 last line	A gives the max. R_{eq}.
E2 p.14 #6 Fig.	The vertical axis should be ρ.
E2 p.14 #8	The answer is B.
E2 p.14 #9 note 2	Require $\Delta = b^2 - 4ac \geq 0$, *not* ≤ 0.
E2 p.14 #12 note	R_{eq} across edge AD is $7r/12$.

E3

E3 p.18 star #1	The answer should be D. Alternative: Unlike E-field lines, B-field lines form closed loops. They run from S-pole to N-pole inside a magnet, and go back to S-pole outside the magnet.