

P 1051 Winter 2009 Final Exam

- 1 (a) 8.93 m/s
1 (b) 0.748 m

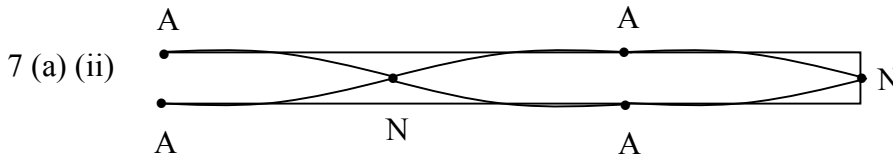
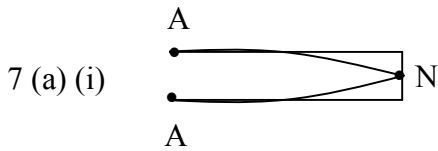
- 3 (a) $4.40 \times 10^{-7} \mathbf{j} \text{ T}$
3 (b) 0

2. 1133 N/C

4. $1.41 \times 10^{-5} \text{ A}$, clockwise

5. 19.8 Hz

6. 640 nm

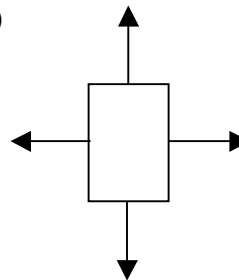


- 7 (b) (i) $\frac{1}{4} \lambda$ 7 (b) (iii) $\frac{3}{4} \lambda$
7 (c) (i) 0.214 m
7 (c) (ii) 257 m/s
7 (c) (iii) CO_2

- 11 (a) 1.67 N
11 (b) 15.9 A
11 (c) 75.6 m/s
11 (d) clockwise

- 8 (a) 8091 V
8 (b) $7.24 \times 10^4 \text{ N/C } \mathbf{i}$

12 (a)



- 9 (a) $5.89 \times 10^{-7} \text{ m}$
9 (b) $11.8 \times 10^{-7} \text{ m}$
9 (c) increase

- 10 (a) $E_y = 0$
10 (b) $\frac{k\lambda}{R} \cos\theta d\theta$
10 (c) $-0.200 \mathbf{i} \text{ N/C}$

- 12 (b) $1.70 \times 10^{-5} \text{ N left}$
12 (c) $1.02 \times 10^{-5} \text{ N left}$
12 (d) 1.37 Am^2 into page
12 (e) zero