

國立屏東教育大學 102 學年度學士班轉學考試

普通物理 試題

(應用物理系/先進薄膜製程學士學位學程)

*注意事項：

- (1) 本試題共 1 頁，答案請「橫式」書寫，並依規定上下翻頁。
- (2) 不必抄題，但請依序將題號標出，並寫在答案紙上，否則不予計分。

1. 請推導楊格雙狹縫實驗中，暗紋的位置。(10%)
2. 請說明克卜勒行星運動定律。(10%)
3. 請說明庫倫定律與高斯定律。(10%)
4. 請說明法拉第定律與冷次定律。(10%)
5. Figure 1 shows a narrow charged solid cylinder that is coaxial with a larger charged cylindrical shell. Both are nonconducting and thin and have uniform surface charge densities on their outer surfaces. Figure 1-b gives the radial component E of the electric field versus radial distance r from the common axis, and $E_s = 3.0 \times 10^3 \text{ N/C}$. What is the shell's linear charge density? (30%)

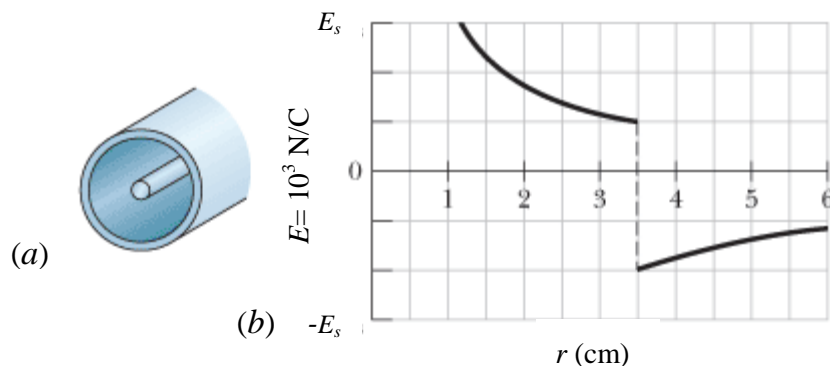


Fig 1

6. The uniform solid block in Fig. 2 has mass 0.172 kg and edge lengths $a = 3.5 \text{ cm}$, $b = 8.4 \text{ cm}$, and $c = 1.4 \text{ cm}$. Calculate its rotational inertia about an axis through one corner and perpendicular to the large faces. (30%)

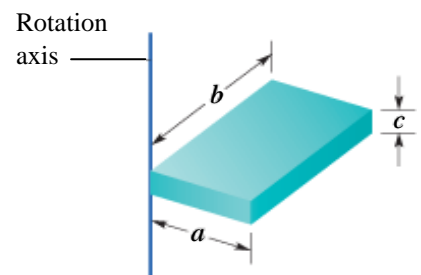


Fig. 2