

光学试题

答案及评分 (193分) (193分) (193分)

1. $I = I_0 e^{-\alpha l} = I_0 e^{-0.1 \times 40} = I_0 e^{-4}$

⑤ +② +① = ⑧

电子质量 kg, 光子初速, m/s

2. $W = \frac{1}{2} m v_0^2 + A = eV_0 + A$

逸出电子动能 (J) | 电子电荷 C | 逸出功, J | 遏止电位, V (伏特)

+② +⑤ +③ 其余 = ⑧

3. $\frac{1}{\lambda} = \frac{1}{\lambda_0} \pm \omega_j$, $\lambda = 4654.7 \text{ \AA}$ 反斯托克斯线

$\lambda = 5128.3 \text{ \AA}$ " " " "

+④ +② +① = ⑧

4688
4289

4.3. $N = \frac{2 \times 10^{16}}{1 \times 10^{-6}} = 2 \times 10^{22} \text{ g}$

(1) 束缚于一点, (2) 涌出新系数

5. (1) $\frac{2\pi}{\lambda} \cos \theta_k = 2\pi k$, $\cos \theta_k = \frac{k\lambda}{2d}$

$\theta_k = \cos^{-1} \frac{k\lambda}{2d}$

+② = ⑧

$f_k = f_0 \sqrt{1 - \left(\frac{k\lambda}{2d}\right)^2}$