Techno ACE

Illustrated Answers for Model Question Paper

Physics

Class : X

1. $r = 2f$ $\qquad \frac{r}{f} = 2$ Ans. Ⓒ

2. $\frac{R_s}{R_p} \geq 4$ Ans. Ⓐ

3. Ⓐ, Ⓒ

4. Ⓐ, Ⓓ

5. Ⓐ, Ⓑ, Ⓒ

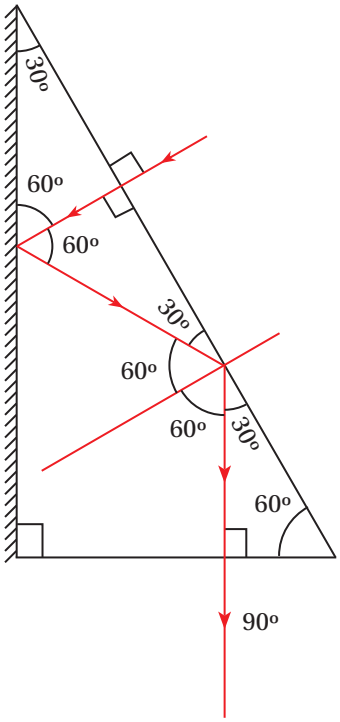
6. $3 + 3 = 6$

$\frac{6 \times 6}{6+6} = \frac{36}{12} = 3$

$\frac{6 \times 3}{6+3} = \frac{18}{9} = 2$

Ans. Ⓑ

7.



Ans. Ⓒ

8. $h = +4$ cm

$u = -25$ cm

$f = -15$ cm

$$\frac{1}{v}+\frac{1}{u}=\frac{1}{5}$$

$\Rightarrow v = -37.5$ cm

$$m=-\frac{v}{u}=\frac{h'}{h}$$

$$\Rightarrow h'=-\frac{vh}{u}=-\frac{(-37.5)4}{(-25)}$$

$\Rightarrow h = -6$ cm Ans. Ⓑ

9. Ⓑ

10. $c = 3 \times 10^{-8}\ ms^{-1}$

$$\mu=\frac{c}{v}=\frac{\nu\lambda}{\nu\lambda'}$$

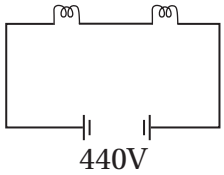
$$\Rightarrow \lambda'=\frac{\lambda}{\mu}=\frac{600}{1.5}=400\,nm$$ Ans. Ⓒ

11. Ⓐ

12. Ⓒ

13. Ⓒ

14. (a)



240 V 120W

$$R=\frac{V^2}{P}=\frac{240\times240}{120}=480\Omega$$

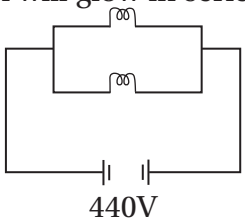
$$\text{Total Current} = \frac{240}{480}A = 0.5A$$

Total resistance = 960 Ω

$$\text{Supply current} = \frac{440}{960}\text{A} = 0.46\text{A}$$

Both will glow in series in (a)

(b)



Total resistance $= \frac{R}{2} = \frac{480}{2}\Omega = 240\Omega$

Supply current $= \frac{440}{240}\text{A} = 1.83\text{A}$

Both will be fused in (b) Ⓐ

15. Ⓐ