

**Part 1: Geometric Optics**

**MULTIPLE CHOICES**

1. D
2. C
3. C
4. A
5. C
6. B
7. B
8. D
9. B
10. B

**Short Answers**

11. The light will be undergo total reflection.
12. 57 cm
13. Inverted
14. Real
15. 11 cm

**Part 2: Physical Optics**

**MULTIPLE CHOICES**

1. B
2. A
3. C
4. B
5. C
6. D
7. D
8. A
9. B
10. A

**Short Answers**

11. Black
12. Cone
13. Green (or Yellow)
14. Shorter
15.  $631.57 \times 10^{12}$  Hz

Tie Breaker: 3.095 m