

**SSLC Exam 2026**  
**Physics Answer Key**

SECTION A

1. Joule heating
  2. The statement is correct but the reason is incorrect
  3. (ii) and (iv) are correct
  4. ABF and DEC
- 

SECTION B

5.

(a) Minimum distance between source and reflector should be 17 m

(b)

$$d = vt / 2$$

$$d_1 = 340 \times 0.2 / 2 = 34 \text{ m}$$

$$d_2 = 340 \times 0.3 / 2 = 51 \text{ m}$$

$$\text{Distance between buildings} = 34 + 51 = 85 \text{ m}$$

---

6.

Ray diagram result:

Image is virtual, erect, magnified, formed on the same side of the lens

---

7. (A)

Experiment:

Take water in a glass tank, add a few drops of milk, pass light through it.

Blue light is scattered sideways and red light emerges at the end.

OR

7. (B)

(a) Tyndall effect, light travels through a colloidal medium

(b) Intensity of scattering depends on wavelength of light

---

8.

(a) X represents electric meter (kWh meter)

(b) Live wire through switch to socket, neutral directly connected, earth to earth pin

---

9.

(a)  
Mechanical advantage  $MA = R / r$   
 $= 50 / 10 = 5$

(b) Increase wheel radius or decrease axle radius

---

10. (A)

(a) Electrical energy to heat energy

(b)  
Power  $P = \text{Energy} / \text{time}$   
 $= 7200000 / (2 \times 3600)$   
 $= 7200000 / 7200$   
 $= 1000 \text{ W}$

OR

10. (B)

(a) Electrical energy to mechanical energy

(b)  
Work  $W = P \times t$   
 $= 400 \times 60$   
 $= 24000 \text{ J}$

---

11.

Fleming's left hand rule

Thumb indicates force, forefinger indicates magnetic field, middle finger indicates current

---

SECTION C

12.

- (a) A = Blue, D = Green
  - (b) Primary colours: Red, Green, Blue
  - (c) Complementary pair: Red and Cyan
- 

13.

(a) Nichrome

(b)  
Heat  $H = V^2 t / R$   
 $= 200^2 \times 300 / 60$   
 $= 40000 \times 300 / 60$   
 $= 12000000 / 60$   
 $= 200000 \text{ J}$

(c) Heat increases since H is inversely proportional to resistance

---

14. (A)

(a) Scissors

(b) Principle of lever:

Moment of effort = Moment of load

(c)

MA = Effort arm / Load arm

2 = 1 / Load arm

Load arm = 0.5 m

---

OR

14. (B)

(a) Lever is a rigid bar that rotates about a fixed point

(b)

Second order lever: Load in the middle

Third order lever: Effort in the middle

(c)

Load × Load arm = Effort × Effort arm

60 × 25 = W × 30

1500 = 30W

W = 1500 / 30 = 50 gwt

---

15.

(a) Solenoid is a coil of insulated wire wound in cylindrical shape

(b) Incorrect, polarity depends on direction of current

(c) Increase current and increase number of turns

---

16.

(a) Longitudinal wave

(b) C represents compression, R represents rarefaction

(c)

$f = v / \lambda$

= 350 / 0.01

= 35000 Hz

Since frequency is greater than 20000 Hz, it is not audible

---

17. (A)

(a)

Lens formula:

$$1/f = 1/v + 1/u$$

$$1/(-10) = 1/v + 1/(-20)$$

$$-1/10 = 1/v - 1/20$$

$$1/v = -1/10 + 1/20$$

$$= (-2 + 1) / 20$$

$$= -1/20$$

$$v = -20 \text{ cm}$$

(b) Image is virtual, erect, diminished

---

OR

17. (B)

(a)

$$1/f = 1/v + 1/u$$

$$1/15 = 1/(-7.5) + 1/u$$

$$1/15 = -1/7.5 + 1/u$$

$$1/u = 1/15 + 1/7.5$$

$$= 1/15 + 2/15$$

$$= 3/15$$

$$= 1/5$$

$$u = 5 \text{ cm}$$

(b) Uses: magnifying glass, simple microscope

---

SECTION D

18. (A)

(a) Bulb does not glow continuously because there is no change in magnetic flux

(b) Use alternating current in first circuit

Phenomenon: electromagnetic induction

Changing magnetic field produces induced current in second coil

(c)

$$V_s / V_p = N_s / N_p$$

$$400 / V_p = 200 / 100$$

$$400 / V_p = 2$$

$$V_p = 200 \text{ V}$$

---

OR

18. (B)

(a) Device: Transformer

Use: To increase or decrease voltage

(b)

$$V_p I_p = V_s I_s$$

$$20 \times I_p = 100 \times 1$$

$$20I_p = 100$$

$$I_p = 5 \text{ A}$$

(c)

Secondary coil has more turns and thinner wire

Primary coil has fewer turns and thicker wire

www.educationobserver.com