



SSLC EXAMINATION MODEL

PHYSICS

Time : 1½ Hours

Maximum: 40

General Instructions to Candidates:

- There is a 'Cool-off time' of 15 minutes in addition to the writing time. Use this time to get familiar with questions and to plan your answers.
- Questions with different scores are given as distinct parts.
- Keep in mind, the score and time while answering the questions.
- The maximum score for questions from 1 to 35 will be 80.
- No need to simplify irrationals like $\sqrt{2}$, $\sqrt{3}$, π etc., using approximations unless you are asked to do so.

Scores

PART - I

(A) Answer all questions from 1 to 4. Each question carries 1 score. 4 x 1 = 4

1. Which of the following is related to green energy source?
(Atomic reactor, Diesel engine, Wind mill, Thermal power station)
2. When there is a change in magnetic flux linked with a conductor, an emf is induced in it.
Name the phenomenon.
3. Identify the mirror which always forms virtual and diminished image.
(Plane mirror, Convex mirror, Concave mirror)
4. Which phenomenon of light is made use in optical fibres that are used for communication?

(B) Answer all the questions from 5 to 7. Each question carries 1 score. 3x1=3

5. Find the relation between the terms in the first pair and complete the second pair.
Incandescent lamp : Tungsten
Heating coil of heating appliances : _____
6. According to New Cartesian Sign Conventions, sign of focal length of a concave lens is ____
7. The prominent effect produced when a current passes through a solenoid is
[chemical effect, mechanical effect, magnetic effect, light effect]

PART - II

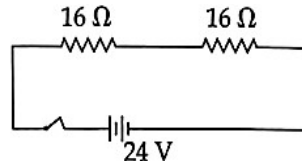
(A) Answer the following question carries 2 scores. 1 x 2 = 2

8. When an object is placed in front of a concave mirror at a distance 60 cm. An image is obtained on a screen at a distance of 30 cm from the mirror. Find focal length of the mirror.

(B) Answer the question. Each question carries 3 scores.

1 x 2 = 2

9. Observe the diagram. Two $16\ \Omega$ resistors are connected in series and a potential difference of 24 V is applied.



- Calculate the effective resistance in the circuit.
- If the resistors were connected in parallel without changing the voltage source what will be the current in the circuit.

PART-III

(A) Answer all questions from 10 to 12. Each carries 3 scores.

3 x 3 = 9

- Calculate the power of a heating appliance having $230\ \Omega$ resistance when 2 A current flows through it.
- Why does Newton's colour disc appears to be white, when it is rotated at high speed? Explain
- When an object of height 5 cm is placed at a distance of 12 cm in front of a concave mirror, a real image was formed at a distance of 24 cm.
 - Calculate magnification (use New Cartesian Sign Convention)
 - Find the height of the image.
 - Based on magnification how can we predict whether the image formed is erect or inverted

(B) Answer the following question carries 3 scores.

1 x 3 = 3

13. A doctor's prescription for a person with defective vision have the figure - 1D, 1.25D.
- What do these figures indicate?
 - Identify the defect of the eye?
 - Write the reason for this defect.

PART-IV

(A) Answer all questions from 14 to 15. Each carries 4 scores.

2 x 4 = 8

14. An incandescent lamp bears the marking 200 V, 100 W.
- What does 100 W indicate?
 - What is the resistance of its filament?
 - Write an advantage of LED lamp over incandescent lamp?

15. AC generators are used in power stations in our Country.

- (a) What is the voltage produced by the generators in our power stations?
- (b) What do you mean by transmission loss?
- (c) Explain how it is minimised

(B) Answer the question. Each carries 4 scores.

1 x 4 = 4

16. The cooking gas that we get in cylinders is LPG.

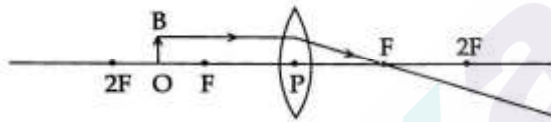
- (a) What indicates the label 'B 23' in LPG cylinder?
- (b) Which is the main constituent of LPG?
- (c) Which substance is added in LPG to detect the leakage of the cylinder?
- (d) What precautions are to be taken to avoid accidents due to LPG leakage?

PART - V

Answer the question. Each carries 5 scores.

1 x 5 = 5

17. A ray diagram related to image formation is given below.



- (a) Copy and complete the diagram to show the image formation.
- (b) Write the characteristics of the image formed.
- (c) Magnification of the image is _____
(Greater than 1, 1, Less than 1)

