

SSLC PRE MODEL EXAMINATION- 2023

SET-2

TIME: 1.30 HOUR

PHYSICS

TOTAL SCORE: 40

Answer any FOUR questions from 1 to 5. Each question carries one score. (4X1=4)

1. Identify the relation in the first pair and complete the second.

Electrical Heating Devices – **Heating Coil**

Safety Fuse -.....

2) Find the odd one from the group

(LNG, LPG, CNG, Biogas)

3) If an electric heater works with 230 V potential difference, consumes 2000 J electrical energy in 2 second, what will be its power?

(1000 W, 2000 W, 750 W, 230 W)

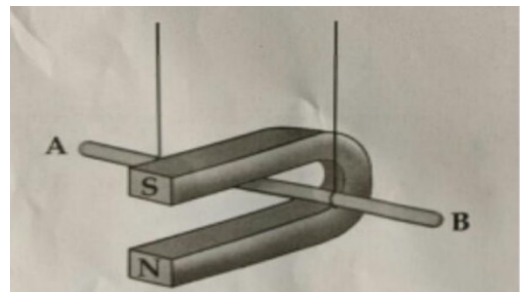
4) Which type of mirror is used as the rear view mirror in vehicles?

5) Far point of a person, having healthy vision is.....

Answer any FOUR questions from 6 to 10. Each question carries 2 score. (4X2=8)

6) State the law, which is used to find the direction of magnetic field produced in a conductor, when current is passed through it?

7) A conductor AB is placed in a magnetic field as shown in the figure.



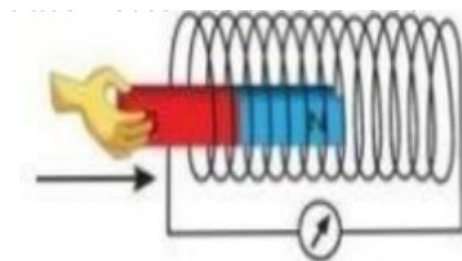
a) If you have to move the conductor outwards, then what will be the direction of current?

b) Which rule is used here to find the above answer?

8) Observe the figure.

a) What happens to the galvanometer needle, when the magnet is moved into the coil?

b) By what name is this phenomenon is known?



9) Calculate the heat generated, if 5 A current is passed through a conductor having resistance 10 Ω for 2 minutes?

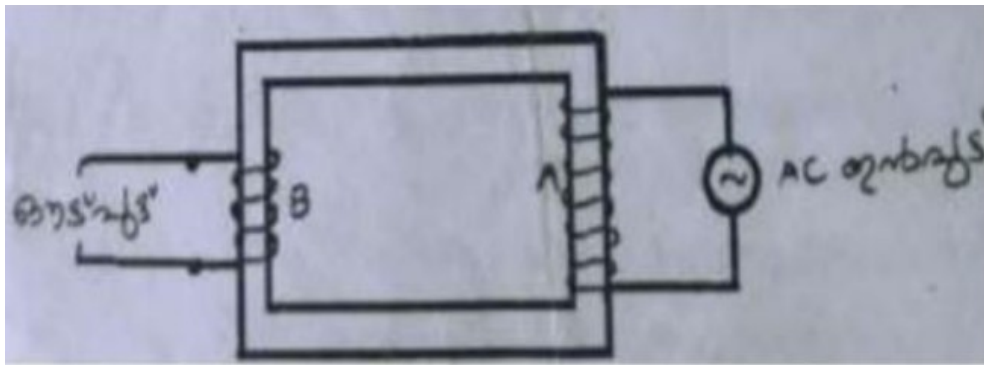
10) Classify the given energy sources as green energy and brown energy.

(Petrol, Diesel, Wave, Wind)

Answer any FOUR questions from 11 to 15. Each question carries 3 score.

(4X3=12)

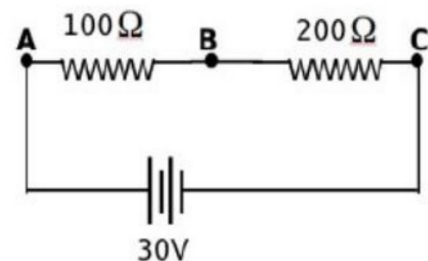
11) Analyse the picture of a transformer and write the answers to the questions given.



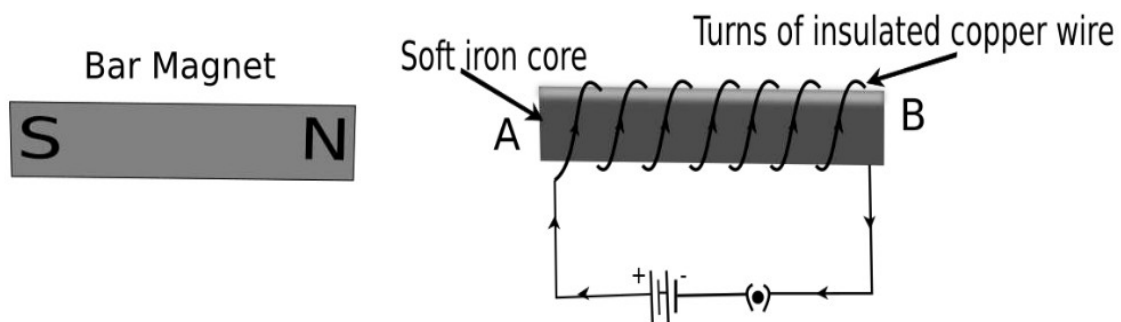
- Which is the secondary coil in this Figure, A or B?
- What is the use of this transformer?
- What is the working principle of transformer?

12) See the circuit.

- The resistors are connected in.....
(series/parallel)
- Which resistor gets more Voltage? (100 Ω, 200 Ω)
- Calculate the heat produced in the 100 ohm resistor in 5 minute.



13) The following figure represents a permanent magnet and an electromagnet.



- Find out the polarity of the electromagnet at A?
- Write any two differences between a permanent magnet and an electromagnet.

14) Analyse the table and answer the following questions.

- In which medium, light travels with highest speed?
- What is the relation between speed of light and optical density of the medium?
- Find the absolute refractive index of the water?

Medium	Speed of light (m/s)
Vacuum	3×10^8 m/s
Water	2.25×10^8 m/s
Glass	2×10^8 m/s (approximately)
Diamond	1.25×10^8 m/s

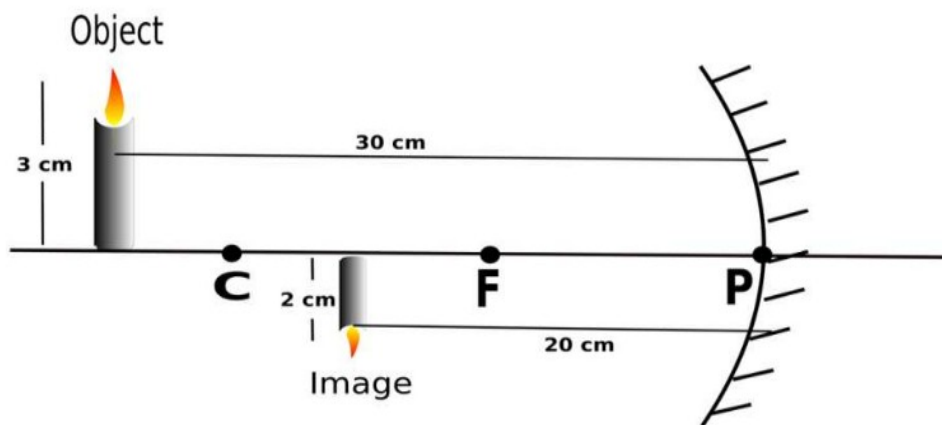
15) Match the following

A	B	C
Moving coil microphone	Motor Principle	Back emf
Moving coil loudspeaker	Self Induction	Sound Energy to Electrical energy
Inductor	Electromagnetic Induction	Electrical energy to Sound energy

Answer any FOUR questions from 16 to 20. Each question carries 4 score.

(4X4=16)

16) Observe the picture below and answer the questions using New Cartesian sign convention.



- Distance to the object from the mirror (u) =
- Distance to the image from the mirror (v) =
- Find the focal length of the mirror (f) =
- Find the magnification of the image (m) =

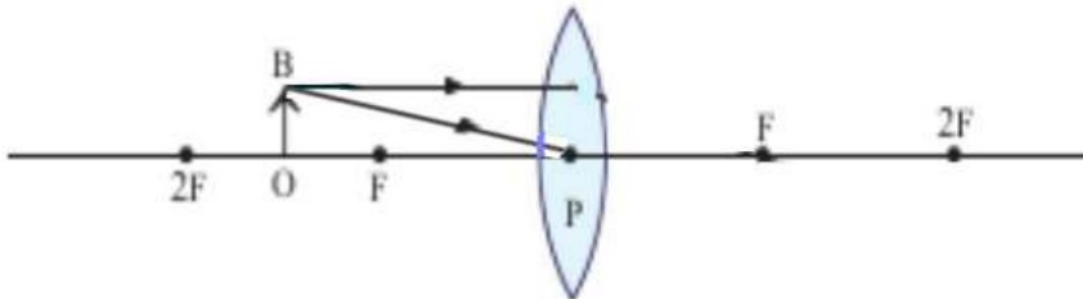
17) An electric iron of resistance 57.5Ω is working in a 230 V supply.

- Write the energy change taking place in this device.
- Calculate the current through the circuit.
- What is the power of this appliance?
- Calculate the heat produced if the current flows for 50 second.

18) Which of the following statements are true about **series and parallel** connections. Tabulate them.

- a) Effective resistance increases
- b) The current through each resistor is different, it gets divided as the value of resistors.
- c) The potential difference across each resistor is different, it gets divided as per the value of resistors.
- d) Each resistor(bulbs) can be controlled by using separate switches.
- e) The current through each resistor is same.
- f) Each resistor (bulb) can not be controlled by separate switches.
- g) The potential difference across each resistor is same.
- h) Effective resistance decreases.

19) OB is an object placed in front of a convex lens.



- a) Draw the ray diagram showing the image formation.
- b) Where is the position of the image?
- c) Write two features of the image?
- d) For getting a virtual image, where should the object be placed?

20) The eye examination report of a child is given.

- a) What is indicated by **D** in **+1.5 D** written in the report?
- b) Which type of lens has to be used here?
- c) Which eye defect is present here?
- d) What may be the reason for this eye defect?

PRESCRIPTION FOR GLASSES

Name: Aradil No: 18
 Address: Kochi Date: 15/08/15

R

L

	SPH	CYL	AXIS	SPH	CYL	AXIS
D.V	+1.00D	-	-	+1.50D	-	-
N.V	-	-	-	-	-	-

R 6/6 L 5/6

VISION AFTER CORRECTION: _____
 REMARKS: _____
 OPHTHALMIC SURGEON: [Signature]