VIJAYAPADHAM

KOTTARAKKARA EDUCATIONAL DISTRICT
SSLC PRE MODEL EXAMINATION 2021-22

PM 01 PS 10 E **Time : 1 $\frac{1}{2}$ hr**

Class : X **Score : 40**

MM 9 E

PHYSICS

PART I

A. Answer any FOUR questions from 1 to 6. Each question carries 1 score.
(4x1=4)

1. Find the odd one.
   (Coal tar, Coal gas, Ammonia, Lignite)
2. Find the relation between the first word pair and complete the second pair.

   Moving coil microphone: Electromagnetic induction;
   Moving coil Loudspeaker:----------
3. The unit of power of the lens is expressed in.....
4. Write down any one factor which influence the magnetic strength of a solenoid.
5. Five 2 ohm resistors are connected in series. Find the effective resistance ?
6. Give a situation in which convex mirror is used ?

B. Answer all questions from 7 to 9. (1 score each) **(3x1=3)**

7 . ..... are coils used to oppose the changes in electric current in a circuit.
8. The ratio of the sine of the angle of incidence to the sine of the angle of refraction will always be a constant. Name this law?
9. The process that takes place in atom bomb is .....
(Nuclear fission, Oxidation , Nuclear fusion , Reduction

PART I1

A .Answer the following question. (2 score) **(1x2=2)**

10. What is transmission loss? How is transmission loss minimised ?

B. Answer any ONE question from 11 to 12. (2 score.)
(1x2=2)

11. Write the difference between the magnetic field around a bar magnet and a current carrying solenoid. (Any two)

12. Give the reason.

a) When it rains, the rain drops look like crystal rods.
b) Twinkling of stars.

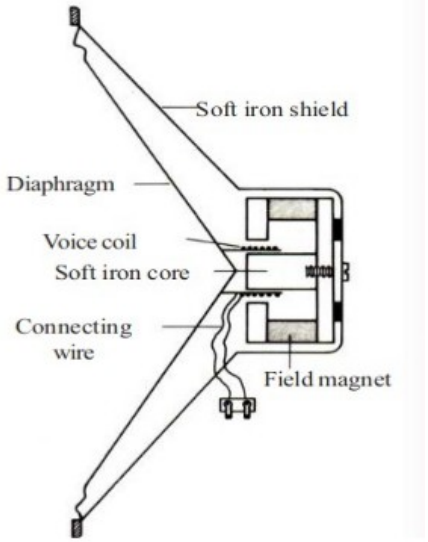
PART111

A. Answer any THREE questions from 13 to 16. Each question carries 3 score. (3X3=9)

13. Match the following

Electric bulb	Nichrome	Electromagnetic induction
Generator	Tungsten	Lighting effect
Electric heater	Field magnet	Heating effect

14. Observe the picture and answer the following questions



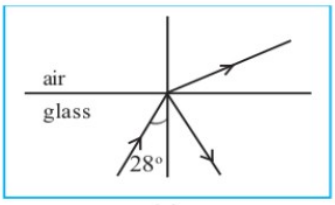
a) Name the device which shown in the figure?
b) What is the working principle of this device?
c) What is the energy transfer taking place in this device?

15. The voltage in the secondary coil of a transformer is 200V and in primary is 400V.
   a) What type of transformer is this?
   b) If current in the secondary coil of a transformer is 1A. Calculate the current in the primary.
   c) What is the power of the secondary coil?

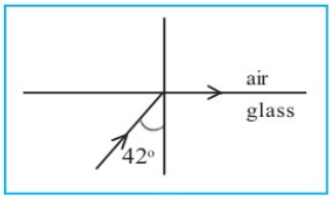
16. When a person suffering from problem in vision met a doctor, he wrote in his prescription +1.5 D
a) What does the figure +1.5D refers to?
b) What type of lens he has to use?
c) Write any defect which can rectify using the above lens

B. Answer the following question. (3 score) (1x3 =3)

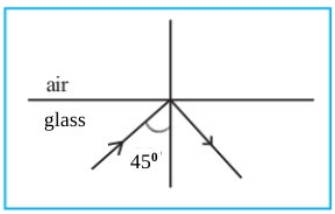
17.



(a)



(b)



(c)

Observe the above diagram and answer the following questions

a) Write the name of particular angle of incidence in Fig (b) ?

b) Name the phenomenon of light in Fig (c) ?

c) Write any one situation in which this phenomenon is useful to us?

PART IV

A. Answer any TWO questions from 18 to 20. Each question carries 4 score.

(2x4=8)

18.

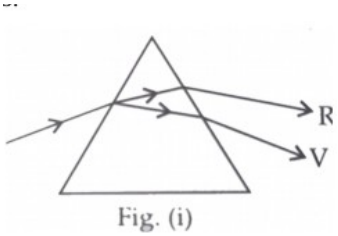


Fig. (i)

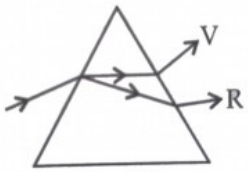


Fig. (ii)

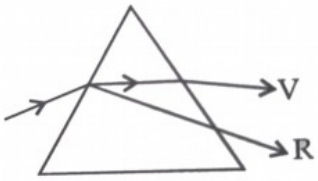


Fig. (iii)

(a) Which among the above figures is correct ? Given reason.

(b) Write the name of the phenomenon.

(c) How does the rainbow appear when the sun is near the horizon ?

19. When an object is placed in front of a spherical mirror of focal length of 20 cm, the magnification of the image is found to be -1.

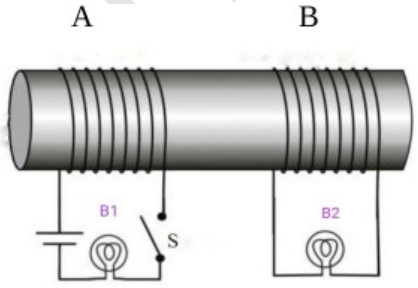
(a) Which type of spherical mirror is this ?

(b) Write any two features of this image ?

(c) When the object is placed 45 cm away from the mirror. Calculate the distance to the image from the mirror .

20. Coils wound around a soft iron core connects two bulbs, B 1 and B 2 of 6 V.

Analyse the figure and answer the questions.



(a) If 6 V DC is given in the coil A and the switch is on, which of the bulbs B 1 and B 2 will glow? Why ?

(b) If AC is given to the coil A instead of DC, which of the bulbs will glow B 1 or B 2 ?Why?

(c) Was there any variation in the brightness of bulb B1 when AC and DC were supplied? Why?

B. Answer any ONE question from 21 to 22. (4 score) (1X4=4)

21 Maximum utilization of solar energy is essential during this period.

(a) Name the electronic component used in solar cell

(b) Write the energy change in solar cell ?

(C) There are certain situations in which solar panel cannot be put to use. Which write any two situations.

22. Filament made of the metal tungsten are used in incandescent lamps.

(a) What properties of tungsten make it suitable for being used as a filament ?

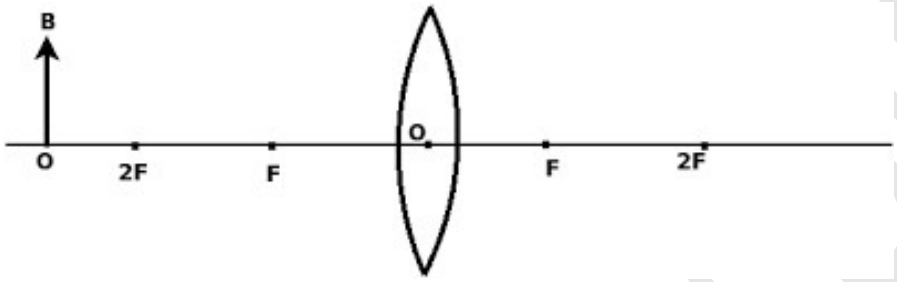
(b) Why is the bulb filled with an inert gas or nitrogen ?

(c) Nichrome is not used as filament in incandescent lamps. Why?

PART V

A. Answer any ONE question from 23 to 24. (5 score) (1X5=5)

23.

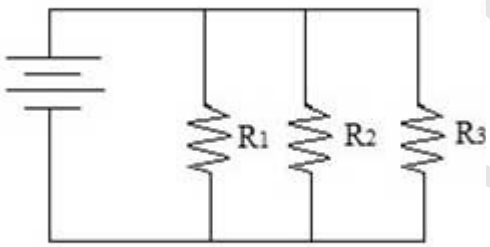


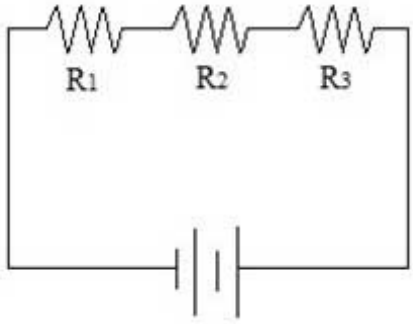
a) Copy and complete the above figure. (2)

(b) Write any two characteristics of the image formed. (1)

(c) If the power of this lens is 5D, then calculate the focal length. (2)

24.Observe the following figures.





CIRCUIT A **CIRCUIT B**

(a) Which method is used to connect a fuse wire in a circuit ?
(In circuit A / In circuit B) (1)

(b) Write the name of this method ? (1)

(c) Which material is used to make fuse wire ? (1)

(d) If equal resistors of 6Ω are connected in both circuits ,Calculate the effective resistance in circuit A and circuit B . **(2)**