



**SET- 3**

**TIME : 1.5 HOURS**

**Maximum: 40 Scores**

**PART I**

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

1. Electric bulb: light effect

Electric Iron: .....

2 VS <VP is associated with ..... transformer

3. Which Mirror used as rear view mirror in vehicles?

4. When the optical density increases ,the speed of light through the medium.....

5. What is the reason for Hypermetropia?

(power of lens is high , size of the eyeball smaller, size of the eyeball larger )

6. What is the main component of CNG?

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

7. Which of the following is related to tungsten?

(Low melting point, high resistance, low resistance)

8. What is the potential difference between the two phase lines?

9. Why does Newton's colour disc turn white when it spins so fast?

**PART II**

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

10. Coal is the largest source of fossil fuels from the earth

a) What is the major component of coal?

a) Write the name of any substance that can be obtained by the distillation of coal?

**B. Answer any one question from 11 to 12. Each carries 2 scores. (1 x2=2)**

11. If the angle between two plane mirrors is 60 degree, what is the number of images formed by the mirrors?

12. What are the reasons for Hydrogen not used as a domestic fuel?

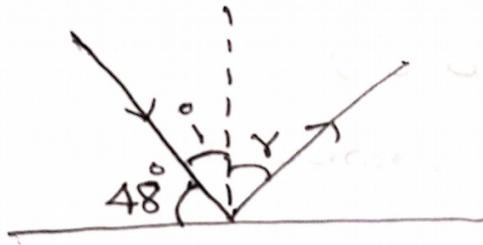
**PART III**

**A. Answer any three questions from 13 to 16. Each carries 3 scores. (3 x3 = 9)**

13. a )Which material is used as a heating element in heating coils?

b) Write down the 4 properties of this material

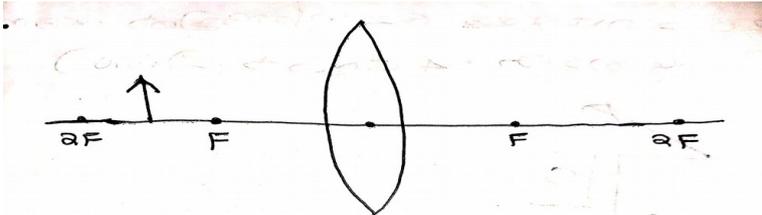
14.



a) What is the angle of reflection?

b) State laws of reflection?

15. a) Complete the picture?



b) Write the position and character of the image?

16. In a circuit the resistors can be connected in two ways, in series mode and in parallel mode.

a) Connect the two resistors  $6\Omega$  and  $12\Omega$  first in series and then in parallel. Calculate the effective resistance in series and parallel?

b) Draw the circuit diagram for parallel connection?

**B. Answer the following question. Carries 3 scores. (1x3 =3)**

17. In snowy days we can clearly see the path of light rays coming from the sun. What is the reason for this phenomenon?

a) Explain this phenomenon

b) What is the relationship between scattering and wavelength of light?

#### PART IV

**A. Answer any two questions from 18 to 20. Each carries 4 scores. (2x4 = 8)**

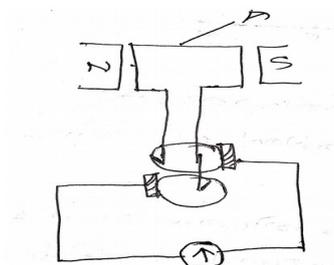
18.

a) Identify the device?

b) What is the working principle of this device?

c) Write the energy change in it

d) Name the part marked as A?



19. 150 W, 230 V are marked on a device.

a) What do you mean by 150W, 230V?

b) What is the resistance of this device?

c) What is the power of this device when voltage becomes 115 V instead of 230 V?

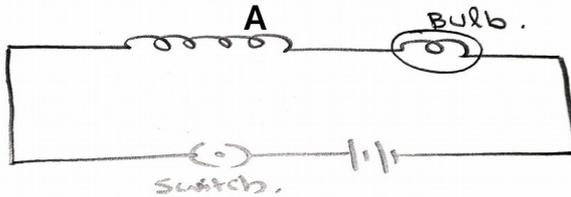
20. a) Write the mirror equation?

b) What is the focal length, if an object is placed at a distance of 40 cm in front of a concave mirror and its real image is obtained at a distance of 60 cm?

c) Calculate the magnification?

B. Answer any one question from 21 to 22. Each carries 4 scores. (1x4 =4)

21.



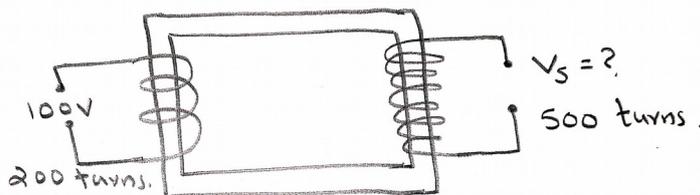
a) Identify the device is marked as A?

b) What will happen to the intensity of the bulb, if DC is replaced by AC?

c) Explain the phenomenon that causes this

d) What happens to the light when a soft iron core is placed inside A?

22.



a) Name the device ?

b) What is its working principle?

c) What is the secondary voltage?

### PART V

A. Answer any one question from 23 to 24. Each carries 5 scores. (1 x5 =5)

23.

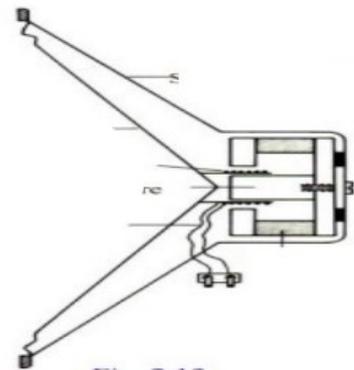
a) Which device is this ?

b) What are its parts?

c) What is the energy change takes place in it?

d) What is the working principle?

e) Explain how it works ?



24. The resistance of a heating device working at 250 V is  $125\Omega$

a) What is the current flowing through it?

b) Calculate the power of this device?

c) What happens to the amount of heat, if the length of the coil of this device decreases ? Why?