UNITE CLASSES
SCIENCE TEST PAPER

CLASS: 10TH **MARKS: 25**
DATE: 08/09/24 **TIME: 1 hr.**

1. Choose the correct option: [1 mark each]

1. The laws of reflection hold true for:
   a) Plane mirrors only
   b) Concave mirrors only
   c) Convex mirrors only
   d) All reflecting surfaces
2. Define the following terms in the context of spherical mirrors:
   a) Pole b) Principal Axis
3. In torches, search lights and headlights of vehicles, the bulb is placed:
   a) between the pole and the focus of the reflector.
   b) very near to the focus of the reflector.
   c) between the focus and center of curvature of the reflector
   d) at the Centre of curvature of the reflector.
4. A convex lens is called ……..
   a) converging lens
   b) diverging lens
   c) both converging and diverging lens
   d) refracting lens
5. Bending of a ray of light due to change in velocity with medium is called
   a) Reflection b) Refraction c) Diffraction d) Dispersion

2. Answer the following questions briefly: [2 marks each]

1. List four properties of the image formed by a concave mirror.
2. Draw the ray diagram when the object is placed between **C** and **F** (neatly)
3. A 5cm tall object is placed at a distance of 30cm from a convex mirror of focal length 15cm. Find the position of the image formed.
4. What is power of lens? Find the focal length of lens whose power is -5D.

3. Answer the following questions: [4 marks each]

1. How far should an object be placed from a convex lens of focal length 20cm to obtain its image at distance of 30cm from the lens? What will be the height of the image if the object is 6cm tall?
2. Name the type of mirror used in the following situations:
   1. Headlight of car **2.** Rear-view mirror of vehicles **3.** Solar furnaces. Support your answer with reason.
3. A convex lens has a focal length of 10cm. At what distance from the lens should the object be placed so that it forms a real and inverted image 20cm away from the lens? What should be the size of the image formed if the object is 2 cm high.
   With the help of a ray diagram show the formation of the image by the lens in this case.

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