Govt Adarsha Vidyalaya Bidarkundi

Class: X **FA-1** **Marks:20**

I. Answer the following Questions 1*4=4

1. An object is kept at the centre of curvature of a concave mirror. The position and nature of the image formed is

   (A) between *F* and *C* and inverted

   (B) behind the mirror and erect

   (C) between *F* and *P* and erect

   (D) at the centre of curvature and inverted.

2. The image of the English letter L in convex mirror looks like

   (A) L (B) ⌋

   (C) L (D) ⌋

3. The change that occurs in the eye to see the distant objects clearly is

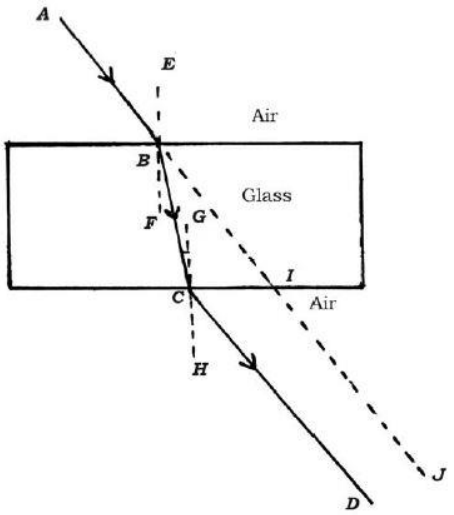
   (A) focal length of the eye lens decreases

   (B) curvature of the eye lens increases

   (C) focal length of the eye lens increases

   (D) ciliary muscles of the eye contract

4. Identify the emergent ray in the given figure.

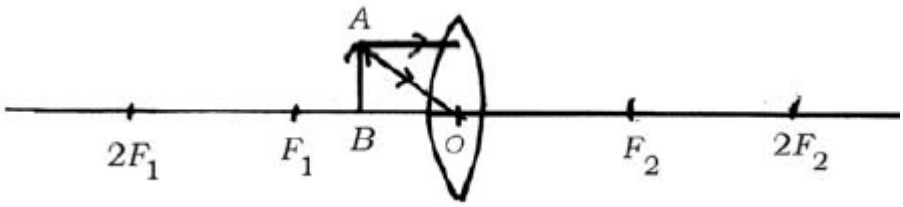


   (A) CD (B) BC

   (C) AB (D) IJ.

II. Answer the following Questions 1*4=4

1. What is the radius of curvature of a spherical mirror ?
2. Convex mirror is commonly used as rear-view mirror in vehicles.Why?
3. Complete the given incomplete diagram.



4. Define 1 dioptre of power of a lens.

III. Answer the following Questions 2*3=6

1. Object distance and image distance of a lens are –30 cm and –10 cm respectively. Find the magnification and decide the type of lens used and nature of the image.
2. The focal length of a concave lens is 30 cm. At what distance should the object be placed from the lens so that it forms an image at 20 cm from the lens ?
3. Differentiate between convex mirror and concave mirror.

IV. Answer the following Questions 3*2=6

1. A concave lens has focal length 30 cm. At what distance should the object be placed from the lens so that it forms an image at 20 cm from the lens ? Also, find the magnification produced by the lens.
2. Draw the ray diagrams for the image formation in a convex lens when an object is placed

   (i) at focus *F*1 (ii) beyond 2*F*1.