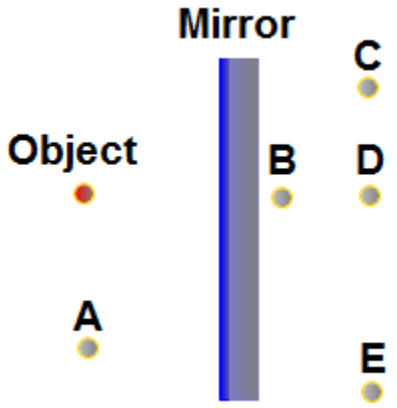
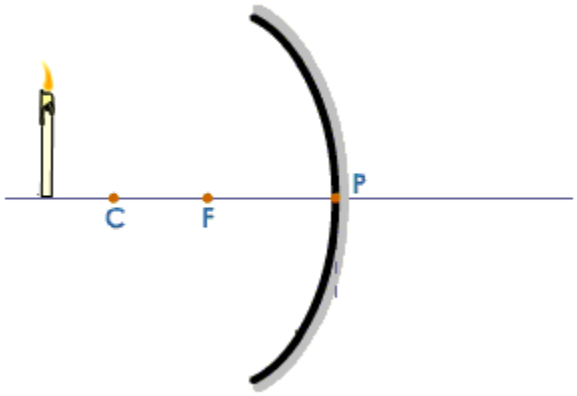
Geometric Optics

Multiple Choice

1. When an object is placed in front of a plane mirror the image is:
   (A) Upright, magnified and real
   (B) Upright, the same size and virtual
   (C) Inverted, demagnified and real
   (D) Inverted, magnified and virtual
   (E) Upright, magnified and virtual

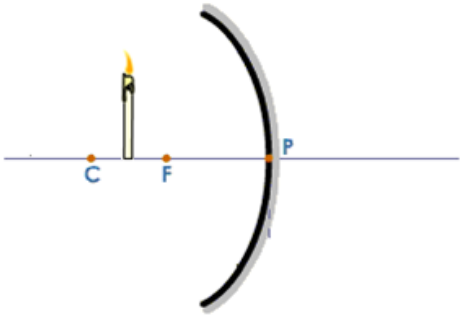


2. A point object is placed in front of a plane mirror. Which is the correct location of the image produced by the mirror?
   (A)A (B) B (C) C (D) D (E) E

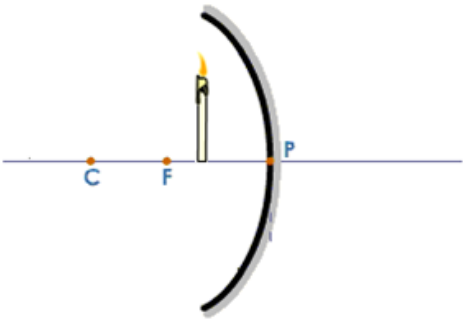


3. A candle is placed in front of a concave mirror. The image produced by the mirror is:
   (A) Real, inverted and magnified
   (B) Real, inverted and demagnified
   (C) Virtual, upright and magnified
   (D) Virtual, upright and demagnified
   (E) Real, upright and magnified

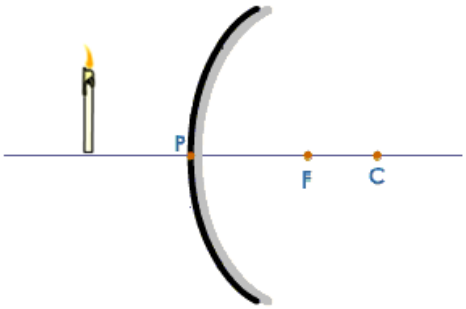
4. A candle is placed in front of a concave mirror. The image produced by the mirror is:
   (A) Real, inverted and magnified
   (B) Real, inverted and demagnified
   (C) Virtual, upright and magnified
   (D) Virtual, upright and demagnified
   (E) Real, upright and magnified

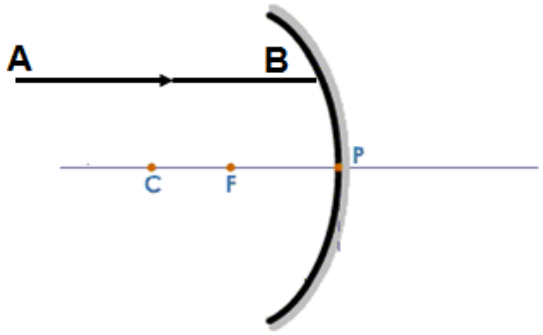


5. A candle is placed in front of a concave mirror. The image produced by the mirror is:
   (A) Real, inverted and magnified
   (B) Real, inverted and demagnified
   (C) Virtual, upright and magnified
   (D) Virtual, upright and demagnified
   (E) Real, upright and virtual

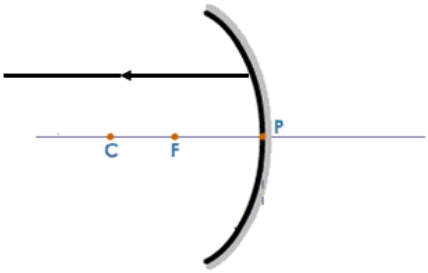


6. A candle is placed in front of a convex mirror. The image produced by the mirror is:
   (A) Real, inverted and magnified
   (B) Real, inverted and demagnified
   (C) Virtual, upright and magnified
   (D) Virtual, upright and demagnified
   (E) Real, upright and virtual

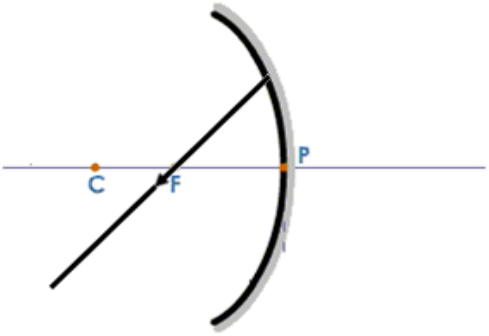




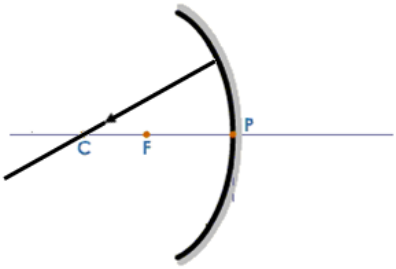
7. A very narrow light ray AB strikes the surface of a concave mirror as shown on the diagram. Which of the following diagrams represents the reflected ray?



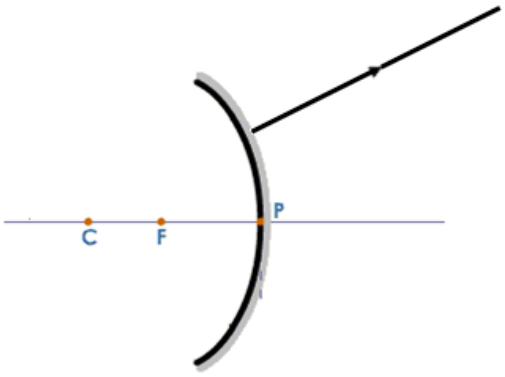
(A)



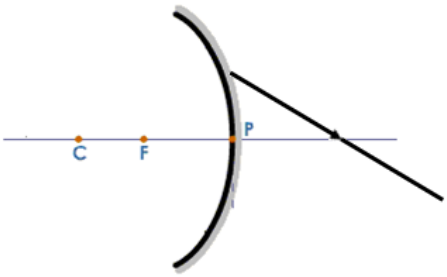
(B)



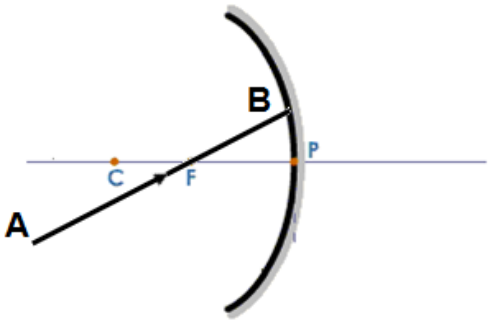
(C)



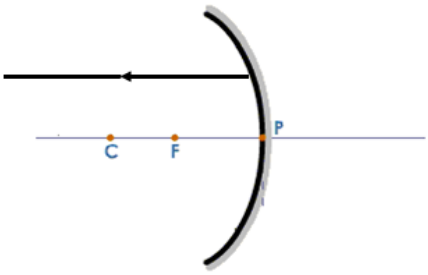
(D)



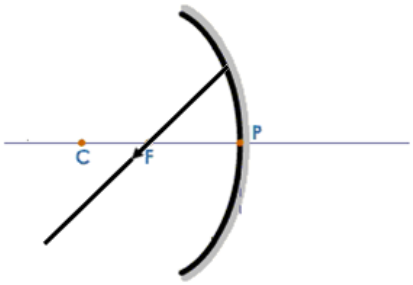
(E)



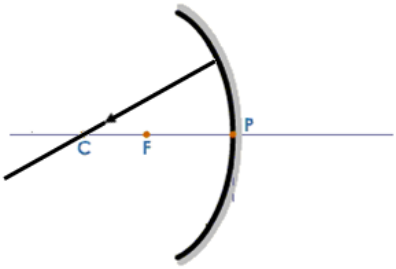
8. A very narrow light ray AB strikes the surface of a concave mirror as shown on the diagram. Which of the following diagrams represents the reflected ray?



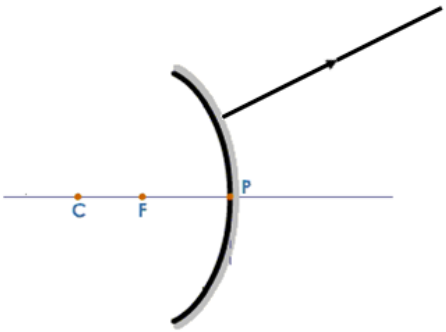
(A)



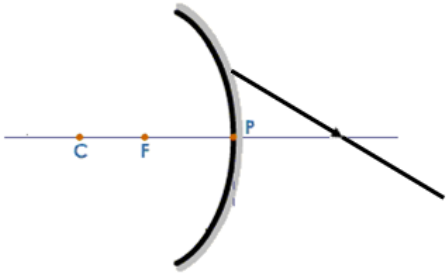
(B)



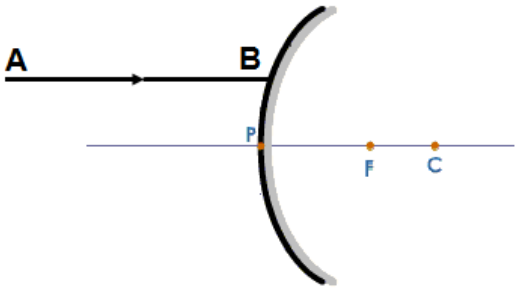
(C)



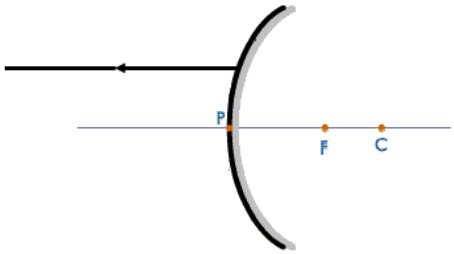
(D)



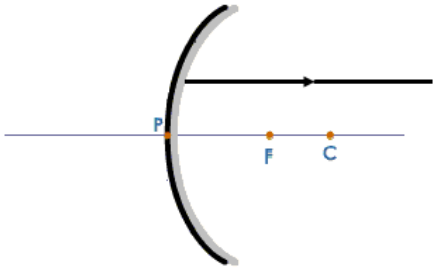
(E)



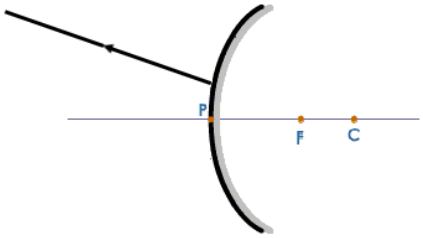
9. A very narrow light ray AB strikes the surface of a convex mirror as shown on the diagram. Which of the following diagrams represents the reflected ray?



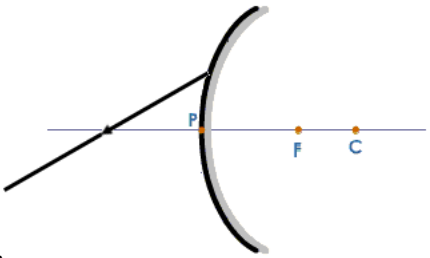
(A)



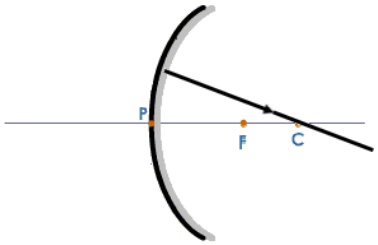
(B)



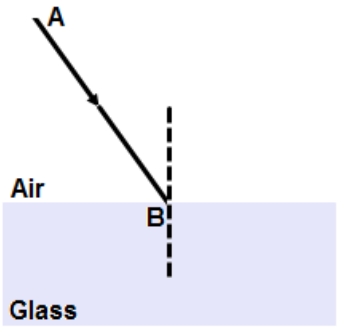
(C)



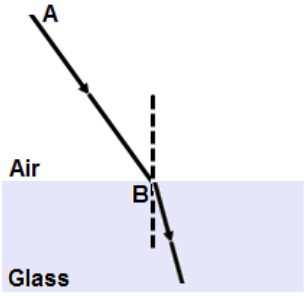
(D)



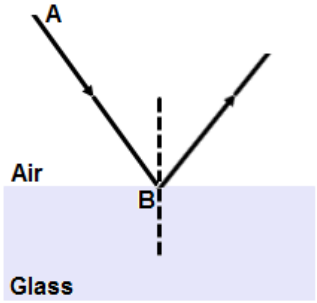
(E)



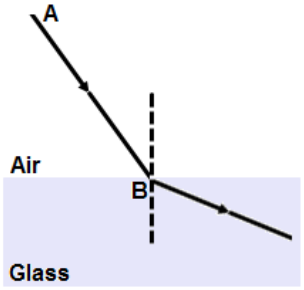
10. A light ray AB is incident obliquely on the surface of a glass block. Which of the following diagrams represents the refracted ray?



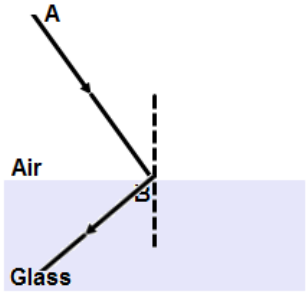
(A)



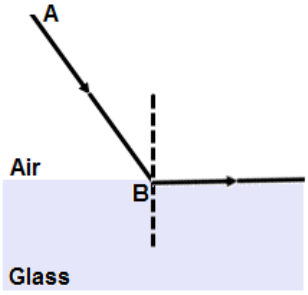
(B)



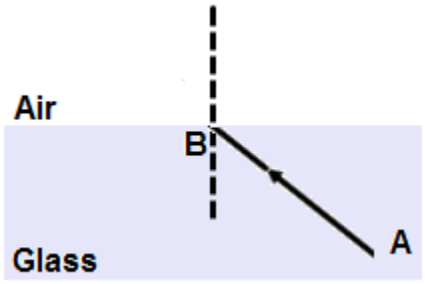
(C)



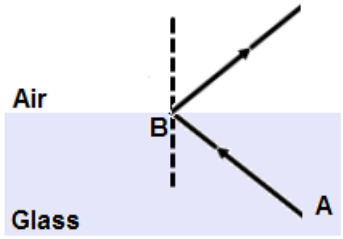
(D)



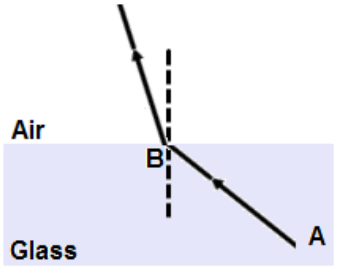
(E)



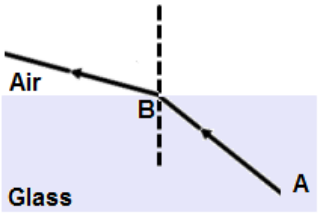
11. A light ray AB passes from glass into air at an angle less than the critical angle. Which of the following diagrams represents the refracted ray?



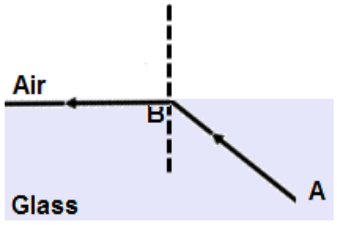
(A)



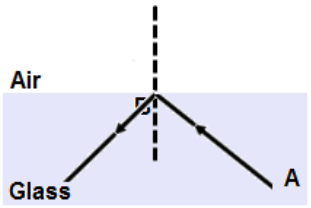
(B)



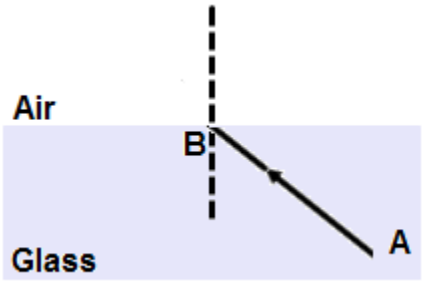
(C)



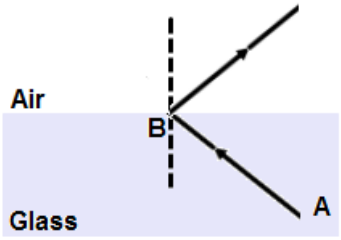
(D)



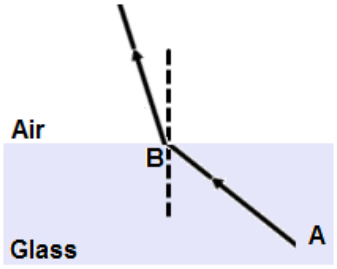
(E)



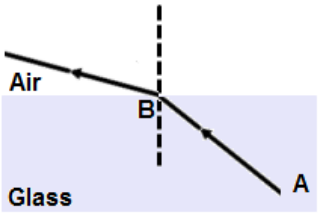
12. A light ray AB passes from glass into air at the critical angle. Which of the following diagrams represents the refracted ray?



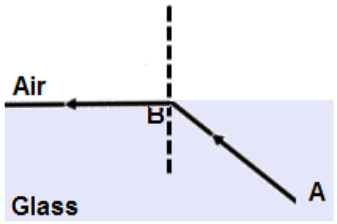
(A)



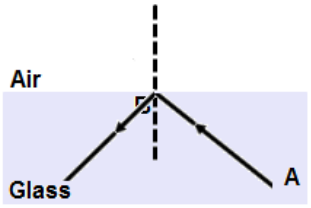
(B)



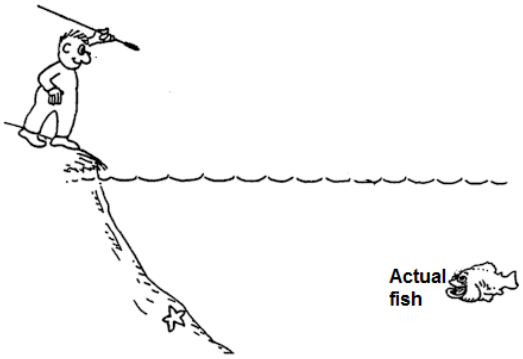
(C)



(D)

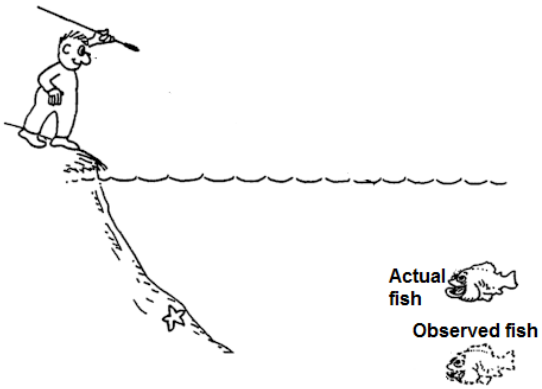


(E)

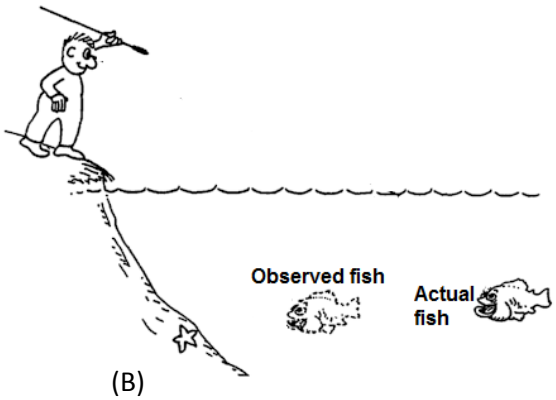


13. A boy is trying to catch a fish from a lake. Which of the following diagrams represents the image of the fish observed the boy?

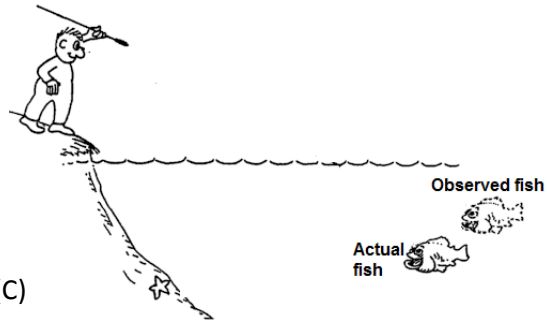
(A)



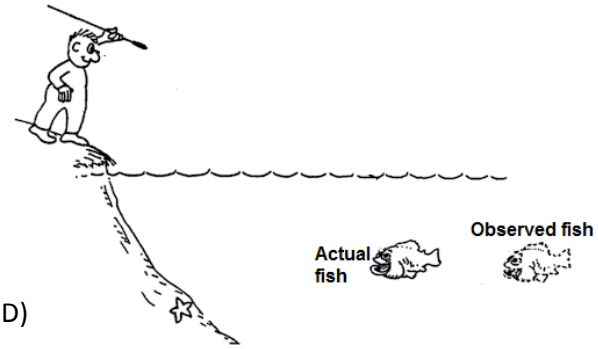
(B)



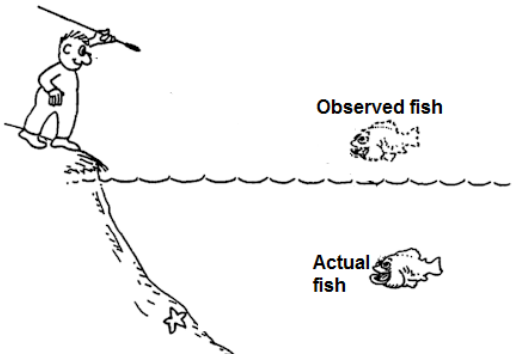
(C)



(D)

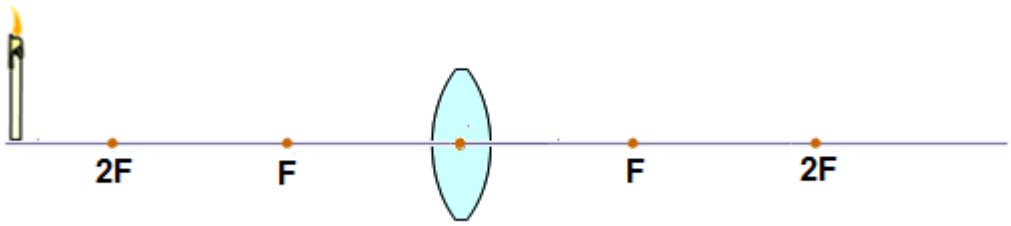


(E)

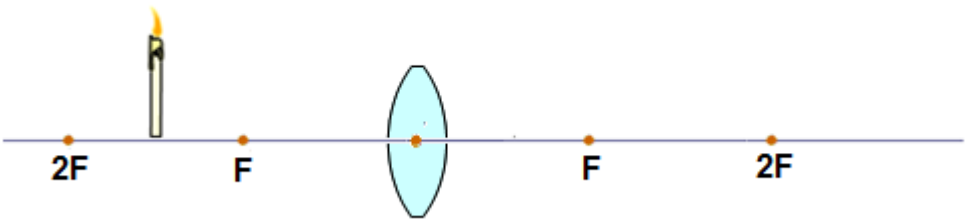


14. Which of the lens or lenses is the converging lens?
    (A) I and V (B) II, III and IV (C) II and III (D) III and IV (E) IV and V

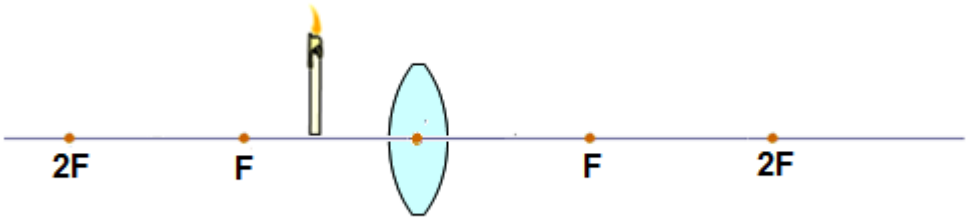
15. Which of the lens or lenses is the diverging lens?
    (A) I and V (B) II, III and IV (C) II and III (D) III and IV (E) IV and V



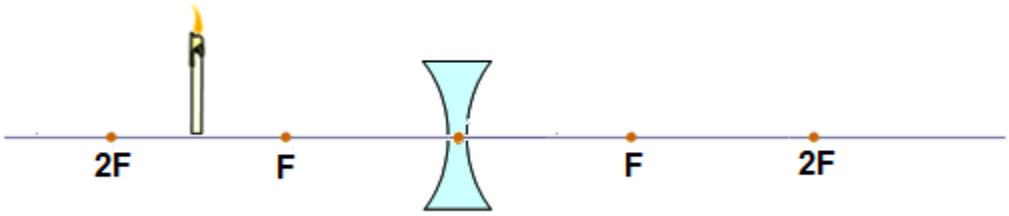
16. An object is placed in front of a converging lens at a distance greater than 2F. The image produced by the lens is:
    (A)Real, inverted and demagnified
    (B)Real, inverted and magnified
    (C) Virtual, upright and magnified
    (D) Virtual, upright and demagnified
    (E) Virtual, inverted and magnified



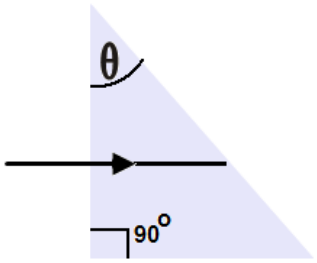
17. An object is placed in front of a converging lens at a distance between F and 2F. The image produced by the lens is:
    (A)Real, inverted and demagnified
    (B)Real, inverted and magnified
    (C) Virtual, upright and magnified
    (D) Virtual, upright and demagnified
    (E) Virtual, inverted and magnified



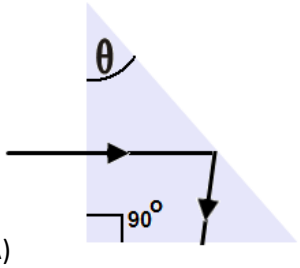
18. An object is placed in front of a converging lens at a distance less than F. The image produced by the lens is:
    (A)Real, inverted and demagnified
    (B)Real, inverted and magnified
    (C) Virtual, upright and magnified
    (D) Virtual, upright and demagnified
    (E) Virtual, inverted and magnified

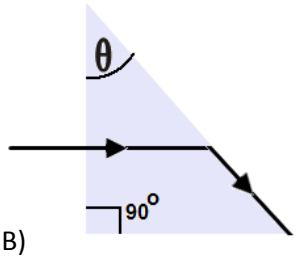


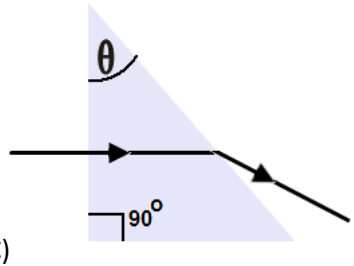
19. An object is placed in front of a diverging lens at a distance between F and 2F. The image produced by the lens is:
    (A)Real, inverted and demagnified
    (B)Real, inverted and magnified
    (C) Virtual, upright and magnified
    (D) Virtual, upright and demagnified
    (E) Virtual, inverted and magnified

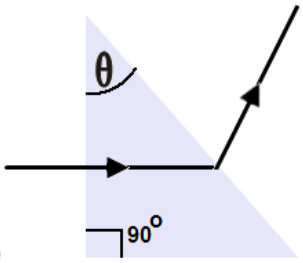


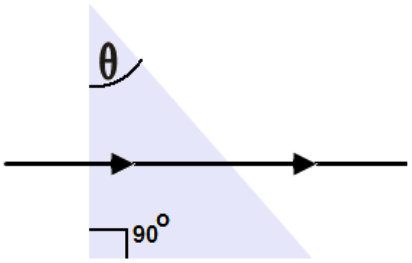
20. A light ray is incident on a glass prism with one angle of 90° and the other angle θ. If θ is greater than the critical angle for glass-air boundary, which of the following is correct for the emerging ray from the opposite face of the prism?

(A)


(B)


(C)


(D)


(E)


Answers

1. B
2. D
3. B
4. A
5. C
6. D
7. B
8. A
9. C
10. A
11. C
12. D
13. C
14. B
15. A
16. A
17. B
18. C
19. D
20. A