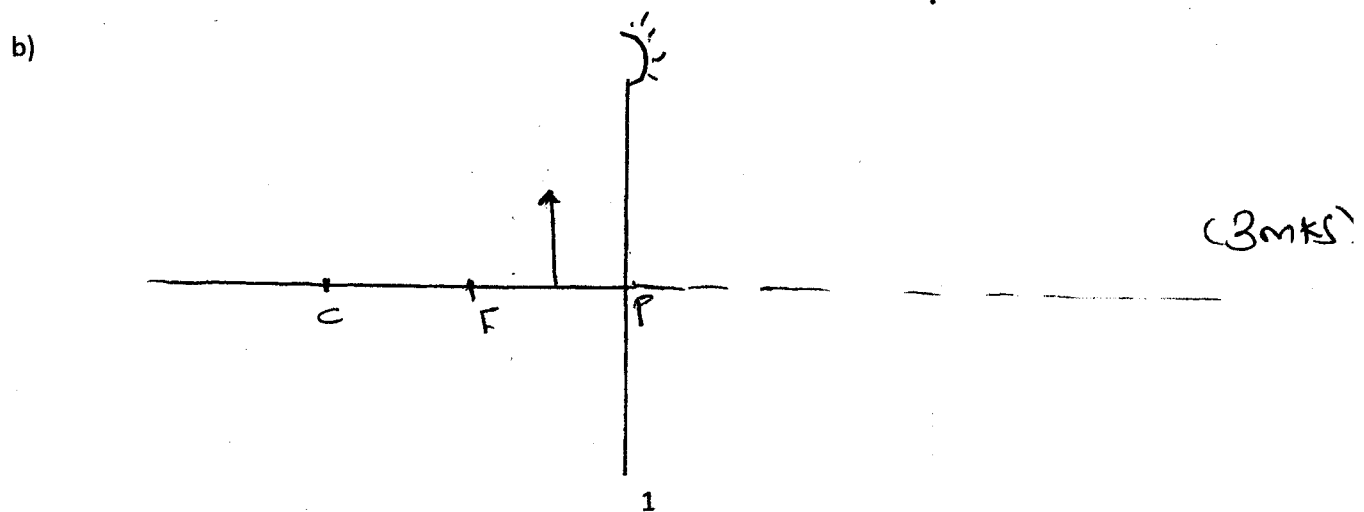
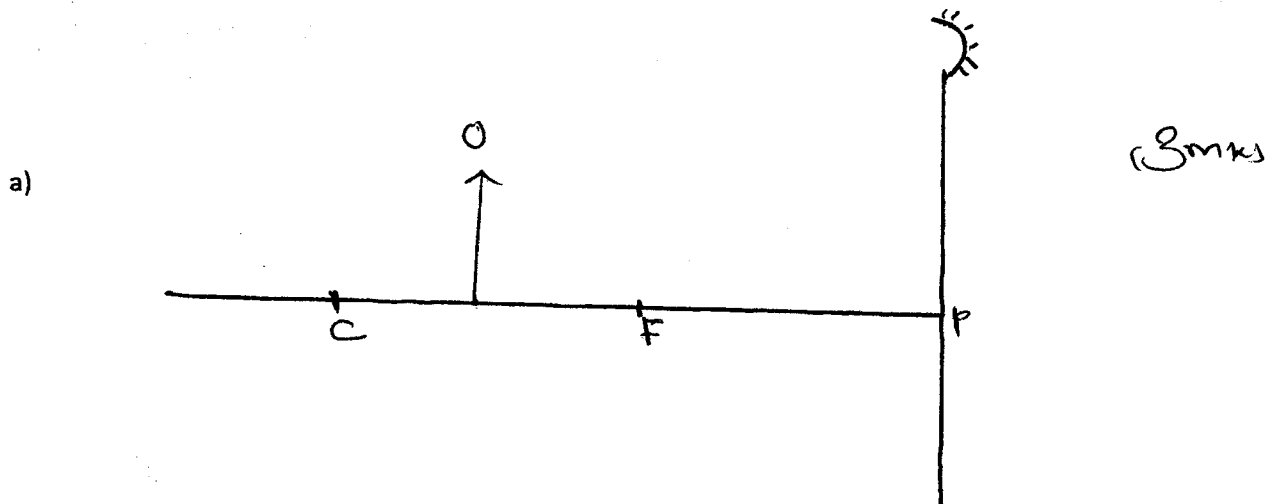


1. Define the following terms with reference to curved mirrors.

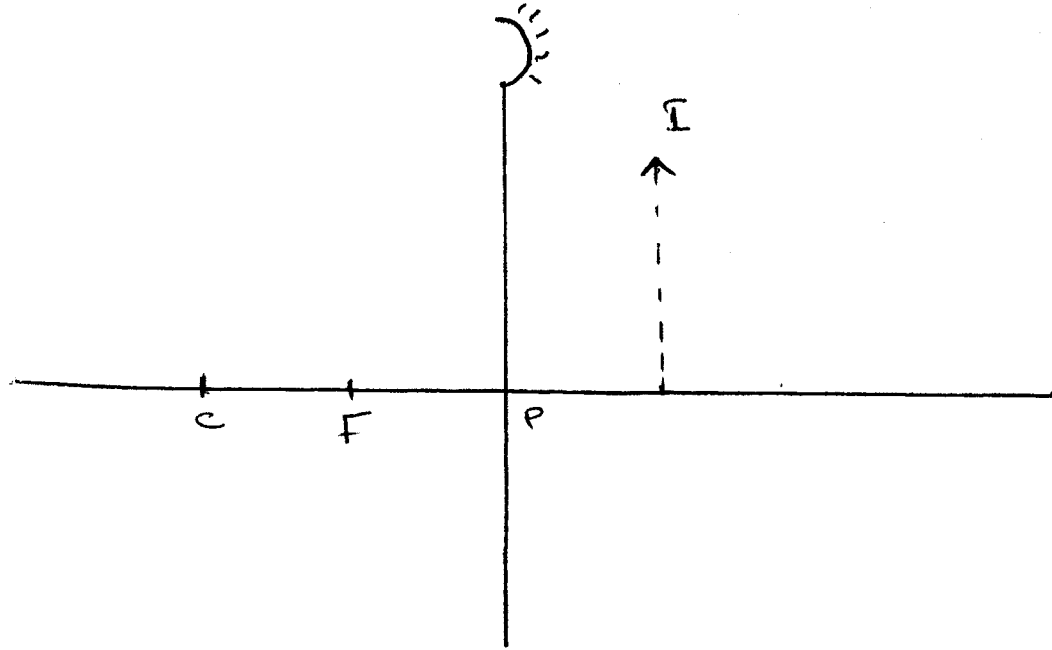
- a) Pole
- b) Principal focus
- c) Principal axis
- d) Focal length
- e) Focal plane

2. Complete the following ray diagrams to show the image of object O. (3mks)



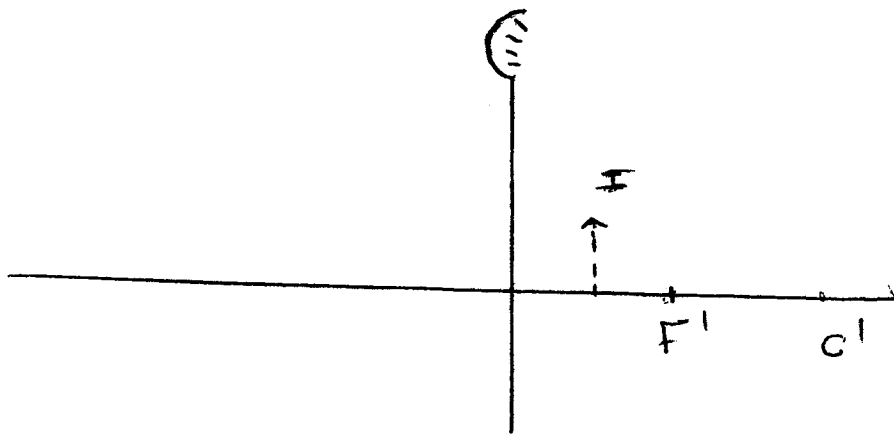
3. Complete the ray diagrams below to locate the position of the object.

a)



(3mks)

b)



(3mks)

4. State with reasons which type of mirror is used as a driving mirror. (3mks)

5. An object is placed 30cm from a concave mirror of focal length 20cm. Calculate

a) The image position (3mks)

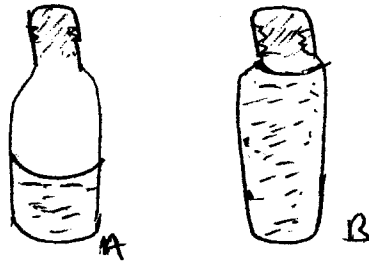
- b) The magnification. (2mks)
6. State with a reason why a concave mirror is suitable as a shaving mirror. (2mks)
7. A man standing between two large cliffs claps his hands at a steady rate and receives two echoes. The first echo comes after 2 seconds and the other after 3 seconds. If the speed of sound in air is 340m/s, find the distance between the cliffs. (4mks)
8. An echo sounder in a ship produces a sound pulse and an echo is received from the seabed after 0.2 seconds. If the velocity of sound in water is 1400m/s. Calculate the depth of the sea. (3mks)
9. State and explain the factors that affect the velocity of sound in air. (8mks)

10. State two ways in which stability of a body can be increased (2mks)

11. Explain why Laboratory stands are made with a wide heavy base (2mks)

12. State with reason which bottle is more stable. A or B

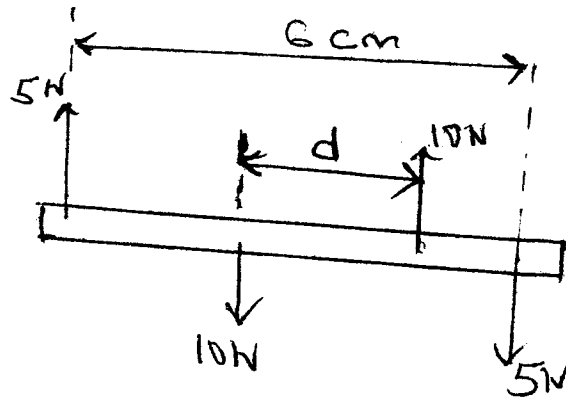
(2 mks)



13. State principle of moments (1mk)

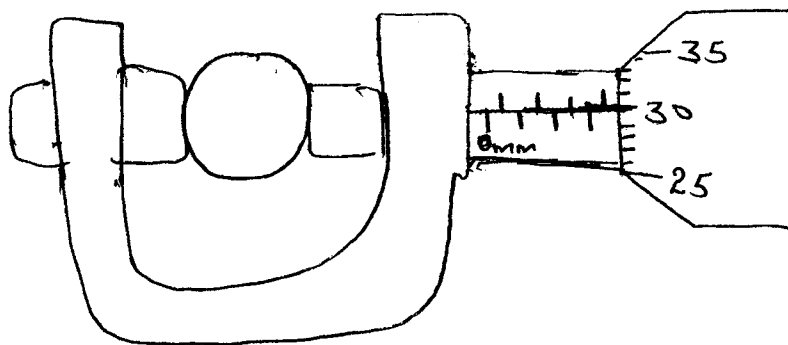
14. A metre rule is balanced by masses 24g and 16g suspended from its ends. Find the position of its pivot(4mks)

15. The following is a system of equilibrium under two pair of forces. Calculate distance 'd' (4mks)



16. State two applications of anti-parallel forces (2mks)

17. The figure below shows a sphere whose mass is 50g. State the diameter of the sphere (2mks)



Calculate the volume of the sphere (2mks)