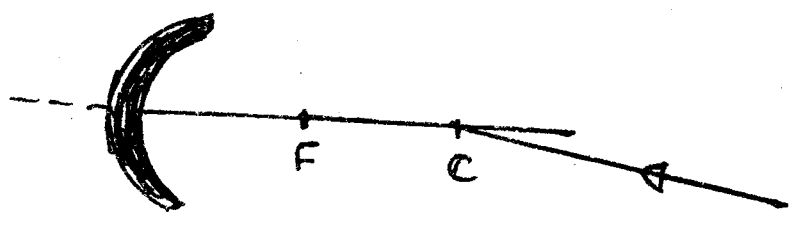


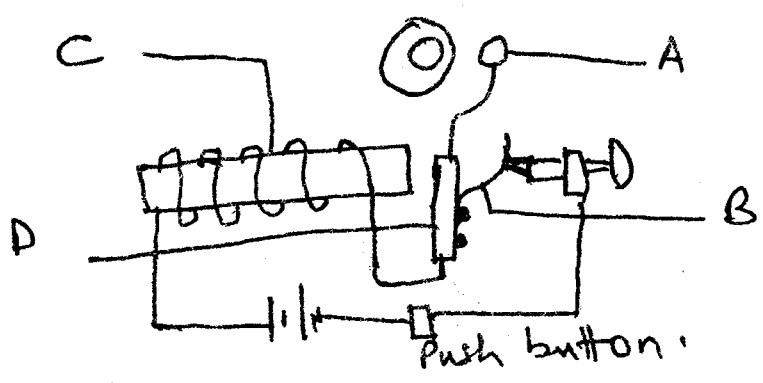
14. The image formed by a plane mirror is virtual. State two other characteristics of the image formed by the plane mirror. (2mks)

15. What does the phrase rectilinear propagation of light mean? (2mks)

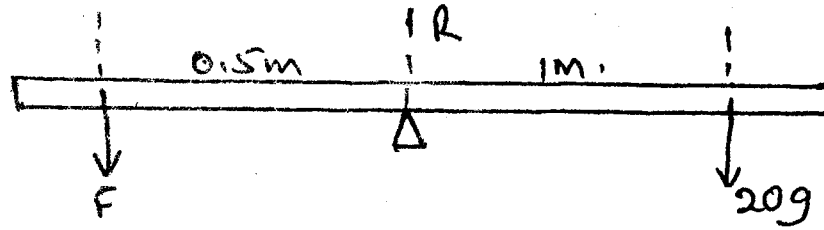
16. Complete the ray diagram below to show the path of the reflected ray. (2mks)



17. The figure below shows a simple circuit diagram of an electric bell. (2mks)



12. Determine the value of  $f$  in the diagram below using the principle of moments. (3mks)



13. When an object  $5.0\text{cm}$  tall is placed at  $30\text{cm}$  <sup>in front</sup> ~~in front of~~ a concave, a real image is formed at  $30\text{cm}$  from the mirror. If the object is now moved by  $5.0\text{cm}$  towards the mirror, determine

i) the new image distance from the mirror.

(3mks)

ii) the size of the image produced by the mirror.

(3mks)

b) State two assumptions made in the experiment above that makes it possible to do the calculations. (2mks)

19. What advantage does a parabolic mirror have over other curved mirrors? (2mks)

20. State five effects showing that an electric current exists. (5mks)

21. A spiral spring produces an extension of 6mm when a force of 0.3N is applied to it. Calculate the spring constant for a system when two such springs are connected in

i) Name the parts labeled (4mks)

A

B

C

D

ii) Explain briefly how the system works (6mks)

18. An oil drop of volume  $9 \times 10^{-12} \text{ m}^3$  forms a circular patch of area  $5 \times 10^{-3} \text{ m}^2$  when allowed to spread on the surface of water. Calculate the thickness of the oil molecule. (4mks)

