2 **(a)** Explain what is meant by *weight.*

....

.... [1]

(b) Fig. 2.1 shows a system of two pulleys with one pulley fixed to the ceiling but free to rotate. The other pulley is attached to a load.
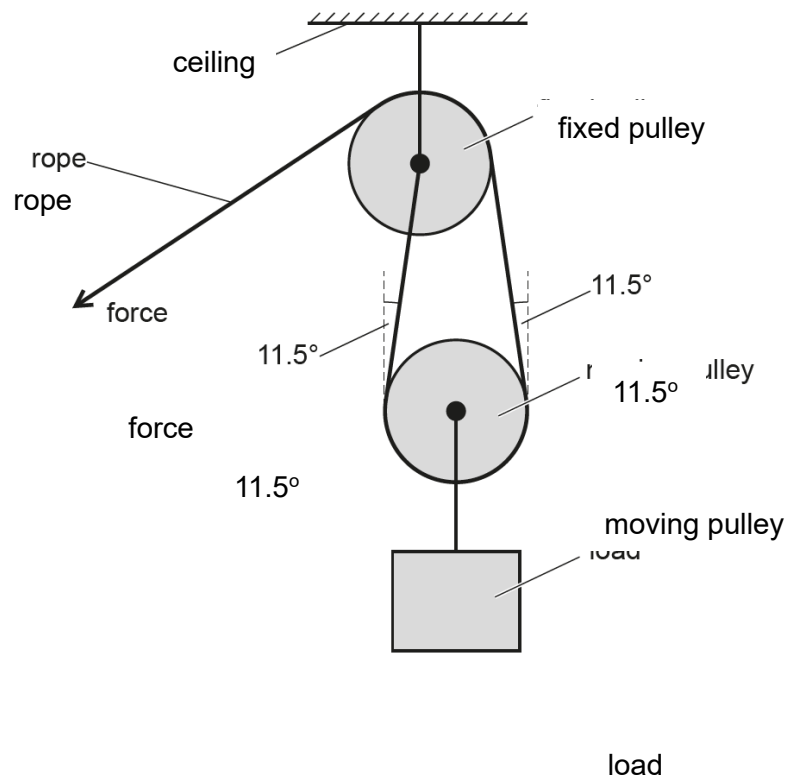

Fig. 2.1 (not to scale)

A force is used to pull the free end of the rope and this lifts the load at a constant speed. The air resistance and friction are negligible. The moving pulley has a mass of 2.40 kg and the load is a box of weight 960 N.

(i) The tension T in the rope is constant along its length. Calculate the tension T.

$T =$ ………………… N [3]

(ii) As the rope moves upwards, the tension in the rope changes. Explain how the tension changes.

……
…..

....[2]

(c) When the pulley system is used, the work done by the force is greater than the gravitational potential energy gained by the load.

  (i) Suggest one reason for this.

  ....
  .....

....[1]

  (ii) Suggest one advantage for using the pulley system.

  ....
  .....

....[1]