For Examiner's Use

3 **(a)** Distinguish between the moment of a force and the torque of a couple.

moment of a force .....

.....

.....

torque of a couple .....

.....

.....

[4]

(b) One type of weighing machine, known as a steelyard, is illustrated in Fig. 3.1.

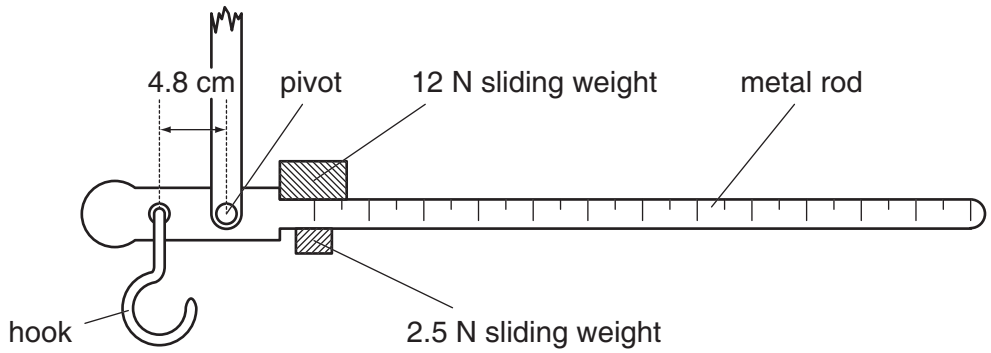

Fig. 3.1

The two sliding weights can be moved independently along the rod.

With no load on the hook and the sliding weights at the zero mark on the metal rod, the metal rod is horizontal. The hook is 4.8 cm from the pivot.

A sack of flour is suspended from the hook. In order to return the metal rod to the horizontal position, the 12 N sliding weight is moved 84 cm along the rod and the 2.5 N weight is moved 72 cm.

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(i) Calculate the weight of the sack of flour.

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weight = ……N [2]

(ii) Suggest why this steelyard would be imprecise when weighing objects with a weight of about 25 N.

.....

.....[1]