Answer **all** the questions in the spaces provided.

For Examiner's Use

1 **(a)** State the SI base units of force.

.....[1]

(b) Two wires each of length l are placed parallel to each other a distance x apart, as shown in Fig. 1.1.

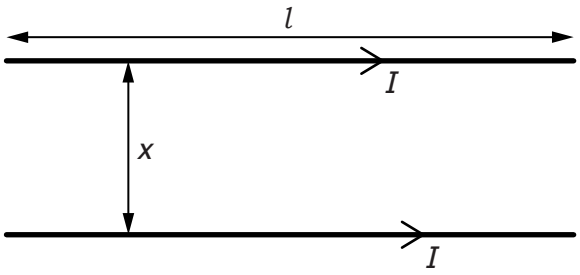

Fig. 1.1

Each wire carries a current I. The currents give rise to a force F on each wire given by

$$F = \frac{KI^2 l}{x}$$

where K is a constant.

(i) Determine the SI base units of K.

units of K ..... [2]

(ii) On Fig. 1.2, sketch the variation with x of F. The quantities I and l remain constant.

Fig. 1.2 [2]

(iii) The current I in both of the wires is varied.

On Fig. 1.3, sketch the variation with I of F. The quantities x and l remain constant.

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Fig. 1.3 [1]

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