1 **(a)** Distinguish between *scalar* quantities and *vector* quantities.

.....

.....

..... [2]

(b) In the following list, underline **all** the scalar quantities.

acceleration force kinetic energy mass power weight [1]

(c) A stone is thrown with a horizontal velocity of $20\,m\,s^{-1}$ from the top of a cliff 15 m high. The path of the stone is shown in Fig. 1.1.

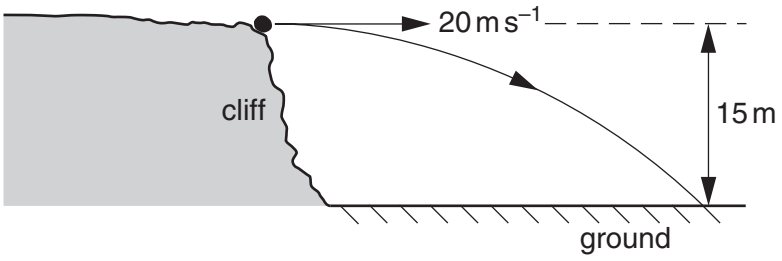

Fig. 1.1

Air resistance is negligible.

this stone,

(i) calculate the time to fall 15 m,

time = ... s [2]

(ii) calculate the magnitude of the resultant velocity after falling 15 m,

resultant velocity = ... $m\,s^{-1}$ [3]

(iii) describe the difference between the displacement of the stone and the distance that it travels.

.....

.....

..... [2]