

4 (a) Compare the molecular motion of a liquid with

(i) a solid,

.....
[2]

(ii) a gas.

.....
[1]

(b) (i) A ductile material in the form of a wire is stretched up to its breaking point. On Fig. 4.1, sketch the variation with extension x of the stretching force F .

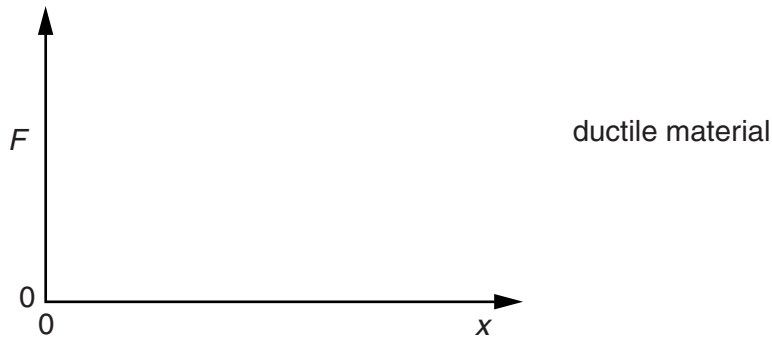


Fig. 4.1 [1]

(ii) On Fig. 4.2, sketch the variation with extension x of the stretching force F for a brittle material up to its breaking point.

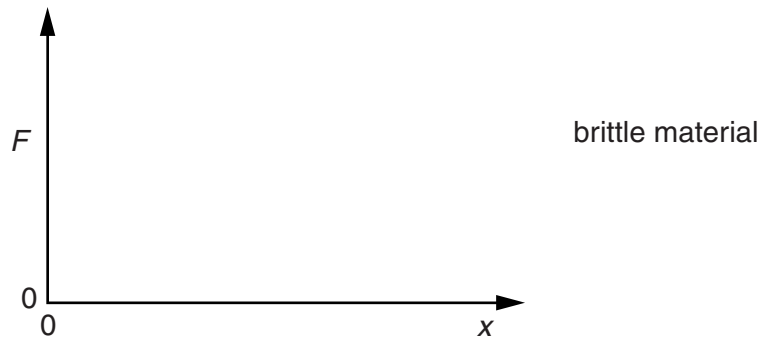


Fig. 4.2 [1]

(c) Describe a similarity and a difference between ductile and brittle materials.

similarity:

difference:

[2]