

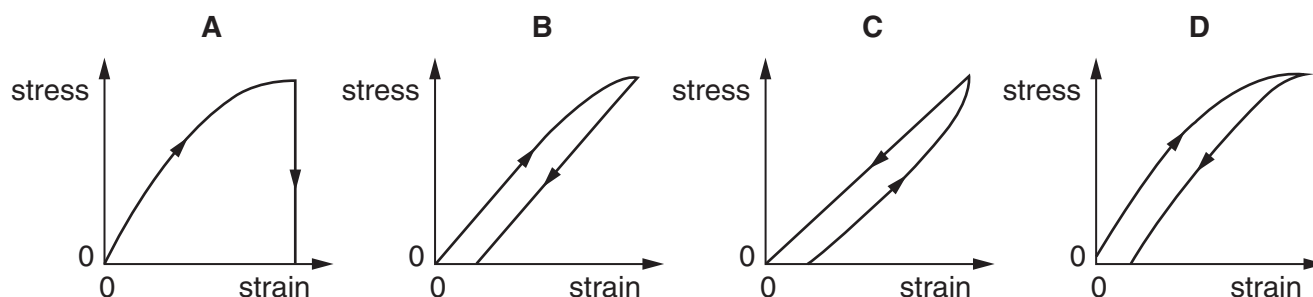
- 18** A motorist travelling at 10 m s^{-1} can bring his car to rest in a distance of 10 m.

If he had been travelling at 30 m s^{-1} , in what distance could he bring the car to rest using the same braking force?

- A** 17 m **B** 30 m **C** 52 m **D** 90 m

- 19** A suspended copper wire is gradually loaded until it is stretched just beyond the elastic limit, and it is then gradually unloaded.

Which graph (with arrows indicating the sequence) best illustrates the variation of the tensile stress with longitudinal strain?



- 20** A child drinks a liquid of density ρ through a vertical straw.

Atmospheric pressure is p_0 and the child is capable of lowering the pressure at the top of the straw by 10%. The acceleration of free fall is g .

What is the maximum length of straw that would enable the child to drink the liquid?

- A** $\frac{p_0}{10\rho g}$ **B** $\frac{9p_0}{10\rho g}$ **C** $\frac{p_0}{\rho g}$ **D** $\frac{10p_0}{\rho g}$

- 21** What is the ultimate tensile stress of a material?

- A** the stress at which the material becomes ductile
B the stress at which the material breaks
C the stress at which the material deforms plastically
D the stress at which the material reaches its elastic limit