1 Select the row of the table which correctly describes the properties of glass.

	Brittle	Tough	Malleable
☒ A	No	No	No
☒ B	Yes	No	No
☒ C	Yes	No	Yes
☒ D	Yes	Yes	No

Use the following Information to answer question 2 and 3

A spring obeys Hooke's law. A force of 2.0 N extends the spring by 0.30 m.

2 A 6.0 N force will extend the spring by
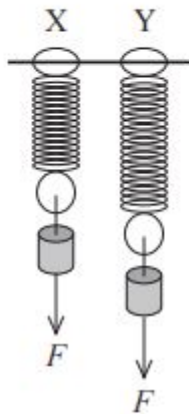
☒ A 0.10 m

☒ B 0.30 m

☒ C 0.60 m

☒ D 0.90 m

3 The energy stored in the spring when a force of 2.0 N is applied is

☒ A 0.09 J

☒ B 0.30 J

☒ C 0.60 J

☒ D 0.90 J

4 A material which can be drawn into a wire is described as being

☒   A brittle.

☒   B ductile.

☒   C hard.

☒   D soft.

5   Two springs, X and Y, are stretched by the same force F. The spring constant of X is double the spring constant of Y.

If the energy stored in Y is E, the energy stored in X is given by

☒ **A** $E/4$

☒ **B** $E/2$

☒ **C** E

☒ **D** $2E$

6   An increasing force is applied to a spring and the corresponding extension is measured.

The spring constant k of the spring is

☒ **A** the applied force per unit extension.

☒ **B** the applied force per unit length.

☒ **C** the gradient of the extension (y-axis) against force (x-axis) graph.

☒ **D** the area under the extension (y-axis) against force (x-axis) graph.

7   A wire of length x is stretched by a force F. The extension is Δx.

A second wire of the same material and cross-sectional area is stretched by the same force. If it has twice the length of the first wire its extension will be

☒   **A** $1/2\,\Delta x$

☒   **B** Δx

☒   **C** $2\Delta x$

☒   **D** $4\Delta x$