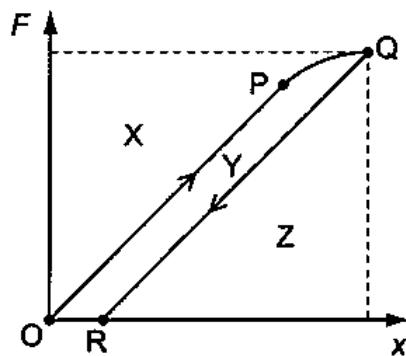


- 8 A metal wire is stretched by a varying force  $F$ , causing its extension  $x$  to increase as shown by the line OPQ on the graph. The force is then gradually reduced to zero and the relation between force and extension is indicated by line QR.



Which of the following correctly represents the work done by the force  $F$  in stretching the wire to Q and the corresponding elastic potential energy stored in the wire?

**Work done by the force  $F$   
in stretching the wire to Q**      **Elastic potential energy  
stored in the wire**

- |   |       |       |
|---|-------|-------|
| A | $Y+X$ | X     |
| B | Y     | Z     |
| C | $Y+Z$ | Z     |
| D | $Y+Z$ | $Y+Z$ |

