Mechanical Properties of Solids

1. **Assertion (A):** A uniform elastic rod lying on smooth horizontal surface is pulled by constant horizontal force of magnitude F as shown in figure (i). Another identical elastic rod is pulled vertically upwards by a constant vertical force of magnitude F (see figure ii). The extension in both rods will be same.

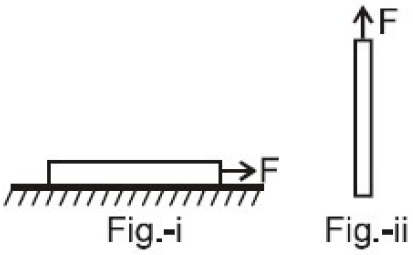


Fig.-i Fig.-ii

Reason (R): In a uniform elastic rod, the extension depends only on forces acting at the ends of rod.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

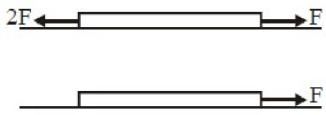
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

2. **Assertion (A):** Two identical uniform elastic rods are lying horizontally on smooth horizontal surface under the action of forces as shown in figure. The elongation in two rods will be same.

Reason (R): The acceleration of rod will be same in both cases.



(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

3. **Assertion (A):** Identical springs of steel and copper are equally stretched. More work will be done on the steel spring.

Reason (R): Steel is more elastic than copper.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

ANSWER KEY			
Que.	**1**	**2**	**3**
Ans.	3	1	3