

## Mathematics Questions by Topics

Motion and Force

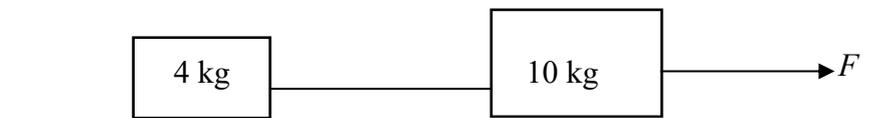
Question 16

Source: K15SM2Q16

### Question 16

Two boxes of masses 10 kg and 4 kg are connected by a light horizontal string and are on a horizontal table, as shown in the diagram below. The coefficient of friction between the 10 kg box and the table is 0.5. The contact between the 4 kg block and table is smooth. The 10 kg box is pulled by a force of  $F$ , parallel to the table.

Which of the following is **false**?



- A. If  $F = 50$  newtons, the boxes move with a constant acceleration equal to  $\frac{1}{14}$  m/s<sup>2</sup>
- B. If  $F = 49$  newtons, the boxes are on the point of moving.
- C. If  $F = 48$  newtons, the boxes move with constant velocity.
- D. If  $F = 47$  newtons the boxes remain at rest.
- E. If  $F = 46$  newtons