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**Q3. A man squatting on the ground gets straight up and stand. The force of reaction of ground on the man during the process is**

- (a) constant and equal to  $mg$  in magnitude**
- (b) constant and greater than  $mg$  in magnitude**
- (c) ' variable but always greater than  $mg$**
- (d) at first greater than  $mg$  and later becomes equal to  $mg$**

**Sol:** (d) In the process of squatting on the ground he gets straight up and stand. Then he is tilted somewhat, the man exerts a variable force on the ground to balance his weight, hence he also has to balance frictional force besides his weight in this case.

$N = \text{Normal reaction force} = \text{friction} + mg \Rightarrow N > mg$

Once the man gets straight up that variable force = 0  $\Rightarrow$

Normal reaction force =  $mg$