

$0.15 (6\hat{i} + 8\hat{j}) = m(\vec{v} - \vec{u}) = m(-\vec{u} - \vec{u}) = -2m\vec{u}$   
 $= -(0.9\hat{i} + 1.2\hat{j})$

5) In the previous problem 4, the magnitude of momentum transferred during the hit is :

A) 0 (B) 0.75 kgm/s (C) 1.5 kgm/s (D) 1.4 kgm/s

Ans :- (c)

We have  $\Delta\vec{p} = -(0.9\hat{i} + 1.2\hat{j})$   
 $\Rightarrow |\Delta\vec{p}| = \text{magnitude} = \sqrt{(-0.9)^2 + (-1.2)^2}$   
 $= \sqrt{0.81 + 1.44}$   
 $= \sqrt{2.25} = 1.5 \text{ kgm/s}$

### Important concepts :-

- 1)  $\vec{F} = m\vec{a}$
- 2) Free body diagram of an object.
- 3) Constraint problems (friction, tension)
- 4) Learn the tricks given.