

NEET LAWS OF MOTION — NEWTON'S SECOND LAW AND MOMENTUM — PYQS

Max. Marks: 28

Questions: 7

Section A (MCQ) — 7 questions

Q.1 The magnitude and direction of the acceleration produced in a body of mass 5 kg when two mutually perpendicular forces 8 N and 6 N act on it, are respectively : [NEET (UG) 2026]

- (1) 2 m s^{-2} ; $\tan^{-1}(3/4)$ with 8 N force
 (2) 2 m s^{-2} ; $\tan^{-1}(4/3)$ with 8 N force
 (3) 2 m s^{-2} ; $\tan^{-1}(3/4)$ with 6 N force
 (4) 20 m s^{-2} ; $\tan^{-1}(4/3)$ with 8 N force

Scan or tap for the full solution 

Q.2 A box of mass 5 kg is pulled by a cord, up along a frictionless plane inclined at 30° with the horizontal. The tension in the cord is 30 N. The acceleration of the box is (Take $g = 10 \text{ m s}^{-2}$) [RE-NEET (UG) 2024]

- (1) 2 m s^{-2} (2) Zero
 (3) 0.1 m s^{-2} (4) 1 m s^{-2}

Scan or tap for the full solution 

Q.3 A football player is moving southward and suddenly turns eastward with the same speed to avoid an opponent. The force that acts on the player while turning is : [NEET (UG) 2023]

- (1) along northward (2) along north-east
 (3) along south-west (4) along eastward

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Q.4 The distance covered by a body of mass 5 g having linear momentum 0.3 kg m/s in 5 s is : [NEET (UG) 2022 (Phase 2)]

- (1) 0.3 m (2) 300 m (3) 30 m (4) 3 m

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Q.5 A balloon with mass m is descending down with an acceleration a (where $a < g$). How much mass should be removed from it so that it starts moving up with an acceleration a ? [AIPMT 2014]

- (1) $\frac{2ma}{g+a}$ (2) $\frac{2ma}{g-a}$ (3) $\frac{ma}{g+a}$ (4) $\frac{ma}{g-a}$

Scan or tap for the full solution 

Q.6 A body, under the action of a force $\vec{F} = 6\hat{i} - 8\hat{j} + 10\hat{k}$, acquires an acceleration of 1 m s^{-2} . The mass of this body must be [AIPMT 2009]

- (1) 10 kg (2) 20 kg
 (3) $10\sqrt{2} \text{ kg}$ (4) $2\sqrt{10} \text{ kg}$

Scan or tap for the full solution 

Q.7 Sand is being dropped on a conveyor belt at the rate of $M \text{ kg/s}$. The force necessary to keep the belt moving with a constant velocity of $v \text{ m/s}$ will be : [AIPMT 2008]

- (1) $\frac{Mv}{2}$ newton (2) zero
 (3) Mv newton (4) $2Mv$ newton

Scan or tap for the full solution 

ANSWER KEY

Ques.	1	2	3	4	5	6	7				
Ans.	1	4	2	2	1	3	3				