

PYQSide

NEET WORK, ENERGY AND POWER — KINETIC ENERGY AND WORK–ENERGY THEOREM — PYQS

Max. Marks: 32

Questions: 8

Section A (MCQ)

- Q.1** The kinetic energies of two similar cars A and B are 100 J and 225 J respectively. On applying brakes, car A stops after 1000 m and car B stops after 1500 m. If F_A and F_B are the forces applied by the brakes on cars A and B respectively, then the ratio of $\frac{F_A}{F_B}$ is

[NEET (UG) 2025]

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

Scan or tap for the full solution



- Q.2** An object moving along horizontal x-direction with kinetic energy 10 J is displaced through $x = (3\hat{i})$ m by the force $\vec{F} = (-2\hat{i} + 3\hat{j})$ N. The kinetic energy of the object at the end of the displacement x is

[RE-NEET (UG) 2024]

- (1) 10 J (2) 16 J (3) 4 J (4) 6 J

Scan or tap for the full solution



- Q.3** Consider a drop of rain water having mass 1 g falling from a height of 1 km. It hits the ground with a speed of 50 m s^{-1} . Take 'g' constant with a value 10 m s^{-2} . The work done by the (i) gravitational force and the (ii) resistive force of air is

[NEET 2017]

- (1) (i) 1.25 J (ii) -8.25 J (2) (i) 100 J (ii) 8.75 J
(3) (i) 10 J (ii) -8.75 J (4) (i) -10 J (ii) -8.25 J

Scan or tap for the full solution



- Q.4** A block of mass 10 kg, moving in x direction with a constant speed of 10 m s^{-1} , is subjected to a retarding force $F = 0.1x \text{ J/m}$ during its travel from $x = 20 \text{ m}$ to 30 m . Its final KE will be

[AIPMT 2015 (Cancelled)]

- (1) 275 J (2) 250 J (3) 475 J (4) 450 J

Scan or tap for the full solution



- Q.5** The upper half of an inclined plane of inclination θ is perfectly smooth while lower half is rough. A block starting from rest at the top of the plane will again come to rest at the bottom, if the coefficient of friction between the block and lower half of the plane is given by

[NEET 2013]

- (1) $\mu = 2\tan\theta$ (2) $\mu = \tan\theta$
(3) $\mu = \frac{1}{\tan\theta}$ (4) $\mu = \frac{2}{\tan\theta}$

Scan or tap for the full solution



- Q.6** A body of mass 3 kg is under a constant force which causes a displacement s in metres in it, given by the relation $s = \frac{1}{3}t^2$, where t is in seconds. Work done by the force in 2 seconds is

[AIPMT 2006]

- (1) $\frac{19}{5} \text{ J}$ (2) $\frac{5}{19} \text{ J}$ (3) $\frac{3}{8} \text{ J}$ (4) $\frac{8}{3} \text{ J}$

Scan or tap for the full solution



- Q.7** A particle of mass m_1 is moving with a velocity v_1 and another particle of mass m_2 is moving with a velocity v_2 . Both of them have the same momentum but their different kinetic energies are E_1 and E_2 respectively. If $m_1 > m_2$ then :

[AIPMT 2004]

- (1) $E_1 < E_2$ (2) $\frac{E_1}{E_2} = \frac{m_1}{m_2}$
(3) $E_1 > E_2$ (4) $E_1 = E_2$

Scan or tap for the full solution



- Q.8** If kinetic energy of a body is increased by 300% then percentage change in momentum will be :

[AIPMT 2002]

- (1) 100% (2) 150% (3) 265% (4) 73.2%

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8			
Ans.	4	3	3	3	1	4	1	1			