

NEET WORK, ENERGY AND POWER — WORK DONE BY CONSTANT AND VARIABLE FORCES — PYQS

Max. Marks: 32
Questions: 8

Section A (MCQ) — 8 questions

- Q.1** A particle of mass M moves along a horizontal x axis from $x = 0$ to $x = L$. The coefficient of kinetic friction varies as a function of x as $\mu_k(x) = \mu_0 - \alpha x$, where μ_0, α are constants of appropriate dimensions, so that $\mu_k(L) = 0$. The total work done by the frictional force during the motion is $n\mu_0 MgL$, where g is the acceleration due to gravity. The value of n is: [RE-NEET (UG) 2026]

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

Scan or tap for the full solution



- Q.2** A force $F = 20 + 10y$ acts on a particle in y -direction where F is in newton and y in meter. Work done by this force to move the particle from $y = 0$ to $y = 1$ m is: [NEET (UG) 2019]

(1) 5 J (2) 25 J (3) 20 J (4) 30 J

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- Q.3** A particle moves from a point $(-2\hat{i} + 5\hat{j})$ to $(4\hat{j} + 3\hat{k})$ when a force of $(4\hat{i} + 3\hat{j})$ N is applied. How much work has been done by the force? [NEET 2016 (Phase 2)]

(1) 8 J (2) 11 J (3) 5 J (4) 2 J

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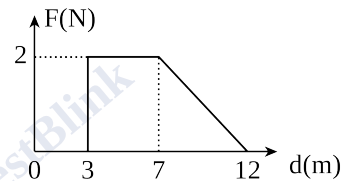
- Q.4** A uniform force of $(3\hat{i} + \hat{j})$ newton acts on a particle of mass 2 kg. Hence the particle is displaced from position $(2\hat{i} + \hat{k})$ metre to position $(4\hat{i} + 3\hat{j} - \hat{k})$ metre. The work done by the force on the particle is [NEET 2013]

(1) 13 J (2) 15 J (3) 9 J (4) 6 J

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- Q.5** Force F on a particle moving in a straight line varies with distance d as shown in figure.



The work done on the particle during its displacement of 12 m is [AIPMT 2011 (Prelims)]

(1) 18 J (2) 21 J (3) 26 J (4) 13 J

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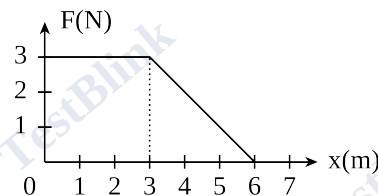
- Q.6** 300 J of work is done in sliding a 2 kg block up an inclined plane of height 10 m. Work done against friction is (Take $g = 10 \text{ m/s}^2$) [AIPMT 2006]

(1) 1000 J (2) 200 J (3) 100 J (4) zero

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- Q.7** A force F acting



on an object varies with distance x as shown here. The force is in N and x in m. The work done by the force in moving the object from $x = 0$ to $x = 6$ m is [AIPMT 2005]

(1) 18.0 J (2) 13.5 J (3) 9.0 J (4) 4.5 J

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- Q.8** 250 N force is required to raise 75 kg mass from a pulley. If the rope is pulled 12 m, then the load is lifted 3 m. The efficiency of the pulley system will be [AIPMT 2001]

(1) 25% (2) 33.3% (3) 75% (4) 90%

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ANSWER KEY

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