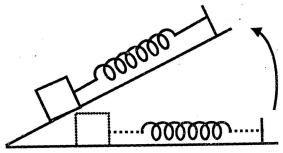
NEW STANDARD ACADEMY

Semri Kothi Super Market, Raebareli

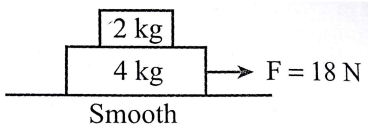
CLASS 11 DPP (Academy) 07-07-2025

PHYSICS

1. A car starts from rest to cover a distance s. The coefficient of friction between the road and the tyres is μ. The minimum time in which the car can cover the distance is proportional to
2. A wooden block of, mass M resting on a rough horizontal surface, is pulled with a force F at an angle with the horizontal. If μ is the coefficient of kinetic friction between the block and the surface, then acceleration of the block is
3. Two bodies of equal masses are connected by a light inextensible string passing over a smooth frictionless pulley The amount of mass that should be transferred from one to another, so that both the masses move 50 m in 5 s is
4. A block of mass m is held at the top of an inclined rough plane of angle of inclination θ. The coefficients of static and kinetic friction are μ_1 and μ_2 respectively. If the block is pushed down at the verge of slipping, assuming $\theta < \tan^{-1} \mu_1$ Its acceleration down the plane is
5. A trolley car slides down a smooth inclined plane of angle of inclination θ If a body is suspended from the roof of the trolley car by an inextensible string of length l, the corresponding tension in the string will be



6. A block can slide on a smooth inclined plane of inclination θ kept on the floor of a lift. When the lift is ascending with a retardation a. the acceleration of the block relative to incline is
7. There is no slipping between the two blocks. What is force of friction between two blocks?



8. A stretching force of 1000 newton is applied at one end of a spring balance and an equal stretching force is applied at the other end at the same time. The reading of the balance will be
9. A block moves down a smooth inclined plane of inclination θ. Its velocity on reaching the bottom is v. If it slides down a rough inclined plane of some inclination, its velocity on reaching the bottom is v/n, where n is a number greater than θ. The coefficient of friction is given by
10. A block of metal is lying on the floor of a bus. The maximum acceleration which can be given to the bus so that the block may remain at rest, will be

CHEMISTRY

1. On the basic of quantum numbers, justify that the 6th period of the periodic table should have 32 elements.
2. How do atomic radius vary in a period and in a group ? How do you explain the variation?
3. Explain why cations are smaller and anions are larger in radii than their parent atoms?
4. How would you explain the fact that the first ionisation enthalpy of sodium is lower than that of Mg but its second ionisation enthalpy is higher than that of mg?
5. The increasing order of reactivity among group 1 elements is Li < Na < K< Rb < Cs whereas that among group 17 elements F > Cl > Br > I . Explain.
6. Write the general outer electronic configuration of s,p,d and f – block elements.
7. Assign the position of the element having outer electronic configuration
   (a) ns^2np^5 for n =3 *(b) (n-1) d^2ns^2 for n=4 and*
8. Define modern periodic law and describe the main features of the long form of periodic table.
9. What are isoelectronic species? Explain with examples.
10. Distinguish between electron gain enthalpy and electronegativity.

BIOLOGY

1. Give the differences between vascular bundle of monocot and dicot root
2. Define-conjoint collateral,
3. Exarch condition in vascular bundle
4. Give the morphological feature of frog
5. Draw the labell diagram -male reproductive system of frog
6. Draw the labell diagram of female reproductive system of frog
7. What is the difference between monocot and dicot stem
8. Give the difference between raceemose and cymose inflorescence
9. What is difference in monocot and dicot leaf
10. Give the difference between simple and compound leaf

MATHS

1. Solve the equation $x(x+2)(x^2-1) = -1$.
2. Solve $(x^2+2)^2 + 8x^2 = 6x(x^2+2)$.
3. Find the value of $2 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{2 + \dots \infty}}}}$
4. Solve $4^x+6^x-9^x$
5. Solve $3^{2x^2-7x+7}=9$
6. Solve $\frac{8^x+27^x}{12^x+18^x} = \frac{7}{6}$
7. Solve $\sqrt{3x^2-7x-30} + \sqrt{2x^2-7x-5} = x+5.$
8. Solve $\sqrt{5x^2-6x+8} - \sqrt{5x^2-6x-7} = 1.$
9. How many roots of the equation $3x^4 + 6x^3 + x^2 + 6x + 3 = 0$
10. Find the value of a if $x^3-3x+a=0$ has three real distinct roots.