

NEW STANDARD ACADEMY

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PHYSICS

1. A particle was at rest from 1 a.m. It moved at a uniform speed 40km/hr from 1.30 a.m. to 2:00 a.m. Find the average speed between
 - (a) 1.00 a.m. and 2.00 a.m.
 - (b) 1.15 a.m. and 2.00 a.m.
 - (c) 1.30 a.m. and 2.00 a.m
2. An object moves along a circular path of diameter 16cm with constant speed. If it takes 4 min. to move from a point on the path to the diametrically opposite point. Find
 - (a) The distance covered by the object
 - (b) The speed (c) The displacement
 - (d) average velocity.
3. A particle with a velocity of 5m/s at $t=0$ moves along a straight line with a constant acceleration of 0.2m/s^2 . Find the displacement of the particle in 15s?

A particle is pushed along a horizontal surface in such a way that it starts with a velocity of 15m/s. Its velocity decreases at a uniform rate of 0.5m/s^2 .

 - (a) Find the time it will take to come to rest.
 - (b) Find the distance covered by it before coming to rest?
4. A train accelerated from 30km/hr to 80km/hr in 5 minutes. How much distance does it cover in this period? Assume that the tracks are straight?
5. A cyclist moving on a circular track of radius 100m completes one revolution in 8 minutes. What is his
 - (a) average speed
 - (b) average velocity in one full revolution

CHEMISTRY

1. In a reaction 5.3 g of sodium carbonate reacted with 6g of ethanoic acid. The products were 2.2g of carbon dioxide 0.9 g of water and 8.2 g of sodium ethanoate. Show that these observation are in agreement with the law of conservation of mass.
2. When 3.0 g of carbon is burnt in 8.0g of oxygen , 11.0g of carbon dioxide is produced. What mass of carbon of dioxide will be formed when 3.0 g of carbon is burnt in 50.0 of oxygen ? which law of chemical combination will govern your answer
3. Which postulate of dalton's atomic theory is the result of the law of conservation of mass?

4. Which postulate of Dalton's atomic theory can explain the law of definite proportions?
5. Calcium carbonate(CaCO_3) decomposes to give CaO and CO_2 . If 100 grams of CaCO_3 are allowed to decompose ,44 grams of CO_2 is formed. If law of law of conservation of mass is true calculate the mass of CaO formed

BIOLOGY

1. Draw the label diagram of plasma membrane which is the given by Singer and Nicolson
2. What is the difference between plant cell and animal cell
3. Give the difference between prokaryotic and eukaryotic cell
4. what is a cell division Explain it
5. Give the function of mitochondria and chloroplast

MATH

1. Write the linear equation such that each point on its graph has ordinate 3 times its abscissa.
2. Find the value of k, if $x = 1$, $y = 1$ is a solution of $9kx + 11ky = 20$.
3. The cost of book (x) exceeds twice the cost of pen (y) by 10 rupees. Express this statement as linear equation.
4. If the point (3,2) lies on the graph of the equation $3y = ax + 5$, find the value of a.
5. The cost of a plate is four times the cost of a cup . Write a linear equation in two variables to represent the statement.
6. Determine the point on the graph of the equation $5x + y = 27$ whose x-coordinate is $\frac{5}{2}$ times its ordinate.
7. Given the point $(\frac{1}{2}, \frac{3}{2})$, find two equation $2x + 3y = 16$,whose y- coordinate is 2 times its abscissa.
8. Draw the graph of the linear equation $2x + 3y = 6$. Find out the coordinates of the points where the line intersects x – axis and y- axis.
9. Find the points where the graph of the equation $2x = 1 - 5y$ cuts the x – axis and y- axis.
10. If $(m-2, 2m+1)$ lies on equation $2x + 3y - 10 = 0$, find m.