

# NEW STANDARD ACADEMY

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## PHYSICS

1. Consider a system of two charges of magnitude  $2 \times 10^{-7}$  C and  $4.5 \times 10^{-7}$  C, which is acted upon by a force of 0.1 N. What is the distance between the two charges?
2. Calculate the work done in moving a charge of 5 C from a point at a potential of 210 V to another point at 240 V.
3. Determine the magnitude of the two identical charges when the electrostatic force between these two identical charges is 1000 N and are separated by a distance of 0.1 m.
4. If  $4 \times 10^{-3}$  J of work is done in moving a particle carrying a charge of  $16 \times 10^{-6}$  C from infinity of point P. What will be the potential at a point?
5. How much energy is given to each coulomb of charge passing through a 9 V battery?

## CHEMISTRY

1. What are acidic salts? Can you convert an acid salt into a normal salt?
2. Point out three properties common to all acids.
3. Explain 'acid', 'base' and 'salt'. Give two examples in each case.
4. Write the formula of the salts given below:  
Potassium sulphate, Sodium sulphate, Magnesium sulphate, Copper sulphate, Sodium chloride, Sodium nitrate, Sodium carbonate and ammonium chloride.  
Identify the acids and bases from which the above salts may be obtained.
5. Give reason why:  
(i) Water should not be added directly to concentrated acid?  
(ii) Antacids are required when there is pain or irritation in the stomach?  
(iii) Baking soda should be rubbed on bee-stung area?

## BIOLOGY

1. Draw the labelled diagram of neuron
2. What is a difference between sensory and motor neurone
3. What is synapse explain with figure
4. What is a reflex action give the example
5. What is reflex arc explain it

## MATHS

1. The distance between the points  $A(\sin\theta, \cos\theta)$  and  $B(\cos\theta, -\sin\theta)$  is p . find the value of p
2. If end points of a diameter of a circle are (-5,4) and (1,0), then the radius of the circle is
3. The distance of the point (-4,3) from y-axis is :
4. Find the values of a for which the distance between the points  $A(x,2)$  and  $B(9,8)$  is 10 units.
5. Find the distance of a point P (x, y) from the origin.
6. Show that the points (7,10), (-2,5) and (3,-4) are vertices of an isosceles right
7. The x –coordinate of a point P is twice its y-coordinate. If P is equidistant from  $Q(2,-5)$  and  $R(-3,6)$ , find the coordinates of p.
8. Find the centre of a circle passing through the points (6,-6), (3,-7) and (3,3) is.
9. Find the perimeter of triangles of its vertices are (3,0), (0,4), (0,0).
10. If the point  $P(x,y)$  is equidistant from the points  $A(a+b,b-a)$  and  $B(a-b,a+b)$ , prove that  $bx = ay$ .