NEW STANDARD ACADEMY

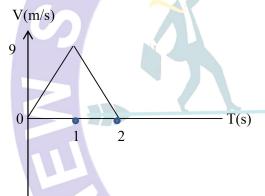## PHYSICS

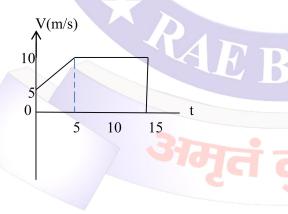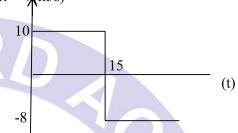Note:- Calculate displacement from question 1 to 4

1.

2. V(m/s)

3.
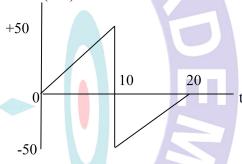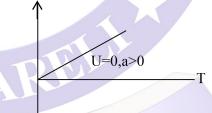

4. V(m/s)

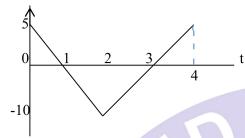Note: Check the of validity of graph in ques: 5&6

5. V(m/s)

6.
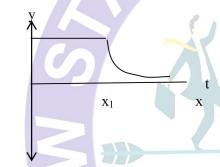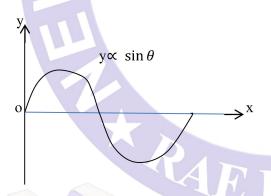Displacement

U=0,a>0

7. $a(m/s^2)$

Calculate velocity in above graph

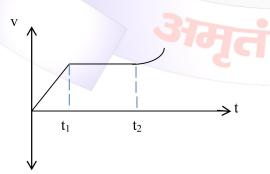Note:- Check the validity of ques:-8&9

8.

9.

$y \propto \sin\theta$

10. Draw graph between a & t,by help of following graph between v-t

CHEMISTRY

1. Write the properties of canal rays.
2. Write the main points of Rutherfords Atomic model ,and also mention the drawbacks
3. Find the number of electrons ,protons and neutrons in the following
   a) $^{15}_{7}N$ b) $^{40}_{19}K$ c) $^{56}_{26}Fe$ d) $^{30}_{14}Si$
4. Explain the dual nature of light
5. Derive the formula for finding Bohr's Atomic radius for H-atom.
6. The threshold frequency(ϑ_0) of a metal is $6.7 \times 10^{14} s^{-1}$ Calculate the maximum kinetic energy of a single electron that is emitted when a radiation of frequency $\vartheta = 1.0 \times 10^{15} s^{-1}$ strikes the metal
7. What are the two longest wavelength lines (in nanometer) in the Lyman series of the Hydrogen spectrum?
8. Calculate the energy of an electron in the second Bohr's orbit of a H-atom.
9. Write the main postulates and drawbacks of Bohr's atomic model.
10. Calculate the wavelength of the Tennis ball When it serve at about $58ms^{-1}$(130 miles per hour) having mass $6.0 \times 10^{-2} kg$.

BIOLOGY

1. What is a satellite chromosome? Draw the labeled diagram of its chromosome.
2. Which cell organelle is found only in animal give its function?
3. Draw the labeled diagram of Submetacenteric and acrocentric chromosome?
4. Give the function of cilia and flagella.
5. Why Chloroplast and mitochondria is called semi-autonomous organelle?
6. What is nucleolus give its function with diagram?.
7. Draw label diagram ,Cross section (T.S) of eukaryotic flagella
8. What is centrosome give its function?.
9. What is Peroxisome give its function?
10. Draw a labeled diagram of Nucleus .Gives its Function.

MATHS

1. Let $x = \{1,2,3,4,5,6\}$ and $y = \{1,3,5,7,9\}$ write the relation from x to y?

2. In a group of 45 students, 22 can speak Hindi only and 12 can speck English only. If $(2\lambda + 1)$ student can speak both Hindi and English the value of λ is.

3. If S=R, A=$\{x: -3 \leq x < 7\}$ and B = $\{x: 0 < x < 10\}$, the number of positive integers in A $\triangle$ B is.

4. Two finite sets have m and n elements. The total number of subsets of the first set is 48 more than the total number of subsets of the second set. The value of m-n is.

5. Draw the graph of following function and also find the domain and range
   a)   Y =|x| c) y= [x]
   b)   y=$\frac{1}{x}$

6. The relation R from A to B is given as R =$\{(5,3)(2,7)(8,5)\}$ then range of R is.

7. If $n(A) = 3, n(B) = 2, n(A \cap B) = 2$ then total number of relations form A to B is.

8. Find the Range and domain of the following function
   a) Y=$\sin^{-1}[x]$ b) y= $\cos^{-1}[x]$

9. Let R = $\{(x,y): x,y \in R, y = x^2 - 6\}$.
   If (a-2) $\in$R, and $(4, b^2) \in R$ Then find the number of elements in the relation R1=$\{(a,b)\}$.

10. Let R be the relation on the set N of natural numbers defined by R=$\{(a,b): a + 3b = 12, a \in N, b \in N\}$ find.
    1) R   2) Domain of R   3) Range of R