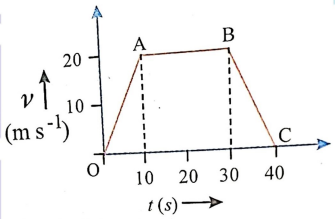
NEW STANDARD ACADEMY

Marks: 80

Date : 14-07-25 **CLASS : 9TH** **Time: 3 hours.**

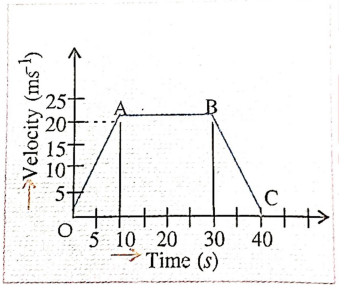
PHYSICS

1. Drive second equation of motion with the help of graph.
2. What is the direction of motion of an object moving in a circular path
3. Differentiate between uniform linear motion and uniform circular motion
4. A car accelerated uniformly from 18 km per hour to 36 km per h in 5 second calculate the acceleration and distance covered by the car in that time
5. A motor boat starting from rest on a lake accelerates in a straight line at a constant rate of 3 m /second 2 for 8 second how far does the boat travel during this time
6. Write difference between the unbalance and balance forced
7. Define Newton's second law of motion
8. Prove that Newton's second law of motion contains the first law of motion also
9. The velocity –time graph of a body is shown in the figure.



(a) State the kind of motion represented by OA and Ab.
(b) What is the velocity of the body at 10s and 40 s.
(c) Calculate the distance covered by the body between 10 th and 30 th second.

10. For a mass of 2 kg, the velocity –time graph is given here .Find the force experienced by the mass in regions OA, AB and BC.

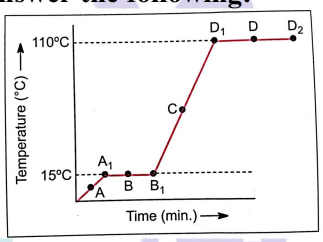


CHEMISTRY

1. What is diffusion? Write the factors affecting the rate of diffusion
2. Write any 4 properties of solids
3. Write any 4 differences between liquids and gases
4. What do you mean by latent heat ?Explain its types
5. Define the following terms
   (1) liquefaction of gases
   (2)evaporation

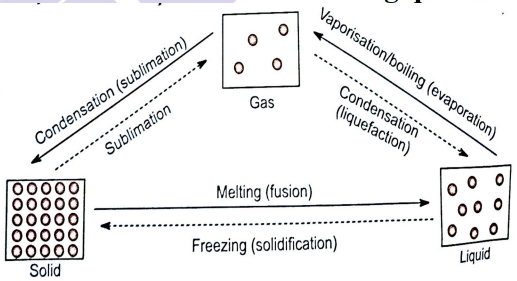
Case **(Question 6&7- Mark -5)**

6. **The temperature – time graph give shows the heating curve for pure wax. From the graph answer the following:**



(i) What is the physical state of the substance at the points A,B,C and D?
(ii) What is the melting point of the substance?
(iii) What is its boiling point?
(iv) Which portions of the graph indicates that change of states is taking place ?
(v) Name the terms used for heat absorbed during change of states in above process.

7. **Study the interconversion of three states of matter and answer the following question:**



(i) Which state of matter has highest kinetic energy?
(ii) Which state of matter has the maximum intermolecular forces of attraction?
(iii) Which state of matter has the maximum intermolecular spaces?

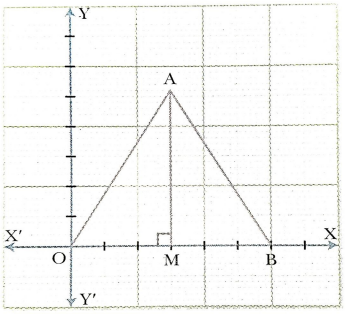
(iv) Which state of matter has the maximum intermolecular forces of attraction?
(v) Which state of matter is most stable ? why

BIOLOGY

1. Do you agree that "A cell is a building unit of an organism " . If yes explain why?
2. Give two major differences between prokaryotes and and eukaryotes.
3. Which of the structures are found
(a) In animal cells, (b) In plant cells only
(c) both animal and plant cells.
4. List three special processes which are involved in the bulk transport of meterials in and out of the animals cells.
5. What are plasmodesmata? What are its functions in plant cells?
6. Define the terms plasmolysis and deplasmolysis'
7. Which parts of green plastid(chloroplast) are the sites of 'light reaction'and dark reaction respectively during photosynthesis?
8. (a) What are lysosomes ?
(b) Describe its structure.
(c) Name the two type of endoplasmic reticulum
(d) What crucial role of lysosome does, it play in the liver cells of vertebrates?
9. I usually go for late evening walk with my father who is a biology teacher. While walking, I saw many plants having coloured flowers. I also saw few plants having white flowers and I also smelled aroma being emitted by them. I was curious and asked my father the following questions :
(i) Why do plants have variously coloured flowers? Give two reasons.
(ii) Why do certain flowers emit aroma? How does aroma of flowers spread in the environment ?
10. Why are chloroplasts commonly called 'kitchen of the cell'?

MATHS

1. If $x = 3 - 2\sqrt{2}$ and $y = 3+2\sqrt{2}$,then find the value of $x^2 + y^2$
2. If p = 2 –a, prove that $a^3+6ap+p^3-8 = 0$.
3. Find the quotient and remainder when $6x^4+11x^3+13x^2-3x+25$ is divided by (3x+4). Also check the remainder by using Remainder Theorem.
4. The area of the triangle formed by the points P(0,1),Q(0,5) and R(3,4) is:
5. The adjoining figure shows an isosceles triangle OAB with sides OA = AB =13 units and OB =10 units. Find the coordinates of the vertices.



6. The equation $-(k-1)x + ky - 5y = 1 - 2ky$; $k > 0$ when expressed in the form $ax + by + c = 0$ gives $c = 6$. What are the values of a and b?
7. If $x = k^2$ and $y = k$ is a solution of the equation $x - 5y + 6 = 0$, find values of k.
8. Simplify : $\left\{\sqrt{5-2\sqrt{6}}\right\} + \left\{\sqrt{3+2\sqrt{2}}\right\}$
9. Express $1.3\overline{2} + 0.\overline{35}$ in the form $\frac{p}{q}$, where pand q are integers, q ≠ 0.
10. $\frac{15}{\sqrt{10}+\sqrt{20}+\sqrt{40}-\sqrt{5}-\sqrt{80}}$, given that $\sqrt{5}$= 2.236 and $\sqrt{10}$= 3.162.