NEW STANDARD ACADEMY

Marks: 80

Date : 19-05-25   CLASS : 9TH Time: 3 hours.

PHYSICS

1. A jet plane starts from rest with an acceleration of 3 m/s^2 and makes a run for 35 sec before taking off. What is the minimum length of the runway and what is the velocity of the jet at the take off?
2. A car moving along a straight highway with a speed of 72 km/hr is brought to stop within a distance of 100 m. What is the retardation of the car and how long does it take for the car to stop?
3. A bullet travelling with velocity of 16m/s penetrates a tree trunk and comes to rest in 0.4 m. Find the time taken during the retardation.
4. A ball thrown vertically upwards with speed of 19.6 m/s from the top of a tower returns to the earth in 6 second. Find the height of the tower.
5. A cyclist travels a distance of 4 km from A to B and then moves a distance of 3 km at right angle to AB. Find his resultant displacement and total distance travelled.
6. A body starts from rest and moves with a uniform acceleration of 2 m/s^2. What will be its velocity and displacement at the end of 10 seconds?
7. A train travels 20 km at a uniform speed of 60 km/h and the next 20 km at a uniform speed of 80 km/hr. calculate its average speed.
8. An athlete completes one round of circular track of diameter 50 m in 10 second. What will be the distance cover and the displacement at the end of 45 second?
9. A ball is thrown upwards with a speed of 15 m/s. What is its maximum height reached?
10. A ball is thrown upwards with an initial speed of 18 m/s. What is its acceleration after 2 seconds?

CHEMISTRY

1. Write any four characteristics of pure substance
2. Give two –two examples of metals, metalloid & non – metals.
3. Write any 2 differences in elements and compounds
4. Define Homogeneous & Heterogeneous mixtures
5. Write the difference in between physical and chemical change
6. What is solution? Write its components
7. Classify the solution on the basic of concentration of solute
8. What is latent heat explain its types
9. Write differences in between evaporation and boiling.
10. Write any four factor's that affects the rate of evaporation.

BIOLOGY

1. Give the name and function of smallest cell organe of cell?
2. What is light reaction of photosynthesis explain it?
3. Where the light and dark reaction take place in chloroplast what will be product of dark reaction
4. What is the position of chlorophy give the name of element which is present in chlorophyll also give its function
5. What is a function of plasma membrane
6. Draw label diagram of plasma membrane (fluid mosaic model)
7. What will be happen -
   I-Cell is Kept in hypertonic solution
   II-Cell is kept in hypotonic solution
8. What is a endocytosis explain with example
9. How green tomato change into red tomato explain it
10. What is osmosis explain with example

MATH

1. Expand using suitable identities   (E)

   (a) $\left(3x + \frac{y}{2} + 4\right)^2$

   (b) $\left(\sqrt{2}a + 2b - \sqrt{3}c\right)^2$

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2. Solve the following expressions using suitable identities   (E)
   (a) $64m^3 - 343n^3$
   (b) $64a^3 - b^3$

3. If $(2a, 3b) = (0, -6)$, then find the values of a and b.   (E)

4. On which axis do the following points lie?   (E)
   (i) P(0,-5)   (ii) Q(4,0)   (iii) C(-3,0)

5. Look at the figure given below and write the following: (E)
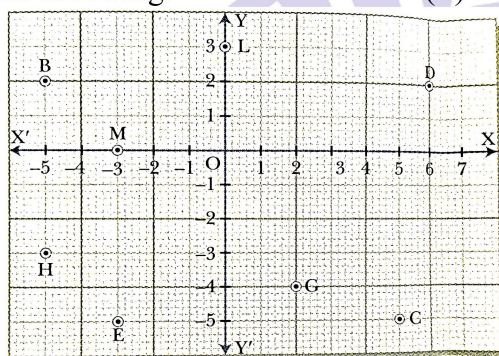
   (i) The coordinates of the point B
   (ii) The coordinates of the point C
   (iii) The point identified by the coordinates (-3,-5)
   (iv) The point identified by the coordinates (2,-4)

6. Simplify using suitable identities   (H)
   $3\sqrt{3}a^3 - b^3 - 5\sqrt{5}\ c^3 - 3\sqrt{15}abc$

7. If $a + b = 3$ and $ab = 2$, find the values of: (H)
   (a) $a^2 + b^2$ (ii) $a - b$ (iii) $a^2 - b^2$

8. If $3x - 2y = 11$ and $xy\ 12$, find the value of $27x^3 - 8y^3$ (H)

9. If $a + b + c = 8$ and $ab + bc + ac = 20$ find the value of $a^3 + b^3 + c^3 - 3abc$ (H)

10. Evaluate $(2x-3y)^3 + (4z-2x)^3 + (3y-4z)^3$