

NEW STANDARD ACADEMY

Date : 24-06-24

CLASS : 09TH

Marks: 80
Time: 3 HRS

PHYSICS

1. Leaves of a tree may get detached if we vigorously shake its branch. Explain why.
 2. Hit on a wall and a piece of sponge with nearly the same force. Did you succeed in doing so?
 3. In the oil tankers some space is left at the top while filling them. Explain.
 4. Explain why a glass pane of window is shattered, when a flying pebble hits it.
 5. A ball of mass 100 g moving with velocity of 10 ms^{-1} is stopped by a boy in 0.2s. Calculate the force applied by the boy to stop the ball.
 6. A car of mass 1000 kg and a bus of mass 8000 kg are moving with same velocity of 36 Kmh^{-1} . Find the force to stop both the car and the bus in 5s.
 7. Define one newton of force.
 8. What is the mathematical formula and SI unit of momentum.
 9. Differentiate between distance and displacement.
 10. A cheetah can accelerate from rest at the rate of 4 ms^{-2} . What will be velocity attained by it in 10s.
4. What do you mean by latent heat? Explain with examples.
 5. Does the temperature of water at 100°C and steam is same?
 6. You are provided with a mixture of naphthalene and ammonium chloride by your teacher. Suggest an activity to separate them with well labelled diagram.
 7. It is a hot summer day. Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why?
 8. You want to wear your favourite shirt to a party, but the problem is that it is still wet after a wash. What steps would you take to dry it faster?
 9. Comment on the following statements:
(a) Evaporation produces cooling.
(b) Rate of evaporation of an aqueous solution decreases with increase in humidity.
(c) Sponge though compressible is a solid.
 10. Why does the temperature of a substance remain constant during its melting point or boiling point?

CHEMISTRY

1. What do you mean by change of physical state? Explain with examples.
 2. Explain the terms:
(a) Boiling point
(b) Freezing point
 3. Explain the following terms with examples:
 - a) Condensation
 - b) Sublimation
 - c) Evaporation
1. Define paddy fish culture.
 2. Define mariculture.
 3. How do fish obtain?
 4. Name the diseases of Honey bee.
 5. What is an inland fishery?
 6. What is Apiary?
 7. Name the caste of Honey bee.
 8. Name the Indigenous breed of Honey bee
 9. What are the advantages of composite fish culture?
 10. Write the differences between capture fishing and culture fishing?

BIOLOGY

MATHS

1. If $a^2 - b^2 = 21$ and $a^2 + b^2 = 29$, which of the following could be the value of ab ?
2. If $a^2 + \frac{1}{a^2} = 119$, then find the value of $a - \frac{1}{a}$
3. If $a=1, b = -2$ and $c = -3$, Find the value of
$$\frac{a^3 + b^3 + c^3 - 3abc}{ab + bc + ca - (a^2 + b^2 + c^2)}$$
4. If $a + b + c = 0$, find the value of $\frac{(b+c)^2}{bc} + \frac{(c+a)^2}{ca} + \frac{(a+b)^2}{ab}$.
5. If $x+y=8$ and $x-y=2$, find the value of $2x^2 + 2y^2$.
6. If $a+b+c = 12$ and $a^2 + b^2 + c^2 = 100$ find the value of $ab + bc + ca$.
7. If $x + \frac{1}{x} = 4$ find the values of
 - i) $x^2 + \frac{1}{x^2}$
 - ii) $x^4 + \frac{1}{x^4}$
8. If $a = 3 + b$, then find the value of $a^3 - b^3 - 9ab$
9. Find the coefficient of x^2 and x in the product of $(x-5)(x+3)(x+7)$
10. Using suitable identities, evaluate the following
 - 1) 105×108
 - 2) $(98)^2$