# NEW STANDARD ACADEMY

**SEMRI KOTHI SUPER MARKET, RAEBARELI**

**CLASS 09 (Biology) DPP (Academy) 05/08/2024**

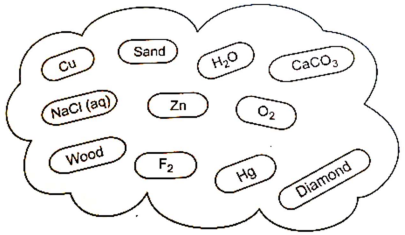
1. Name the term for the fluid substance of the cell.
2. Name two examples of unicellular and multicellular organisms.
3. What are organelles?
4. Define diffusion
5. What do you mean by selectively permeable membrane?
6. What is isotonic solution?
7. Define pinocytosis
8. What is the role of cellulose in the cell wall?
9. Why does a cell shrinks down?
10. Mention two functions of Golgi apparatus.
11. Differentiate between chromoplasts and leucoplasts.
12. What is the role of DNA and ribosome in mitochondria?
13. Who made enzymes for lysosome?
14. What are vacuoles?
15. Name the organelle that is involved in the formation of lysosomes.
16. What do you mean by light reaction and dark reaction?
17. How is plasmolysis different from deplasmolysis?
18. Name the nucleic acid found in a cell.
19. Give two examples of diffusion in plants.
20. What happens when RBCs are placed in hypotonic solution?

# NEW STANDARD ACADEMY

**SEMRI KOTHI SUPER MARKET, RAEBARELI**

**CLASS 9 (CHEMISTRY) DPP (Academy) 5/08/2024**

1. Water is a compound and not a mixture. Explain.
2. How would you confirm that a colourless liquid given to you is pure water?
3. Air is a mixture and not a compound, Comment.
4. Give the names of the elements present in the Quick lime compound.
5. What are the favourable qualities given to gold when it is alloyed with copper or silver for the purpose of making ornaments?
6. Write the names of the compounds: $Na_2S$ , $K_2SO_4$ , $KNO_3$ , $Ca(OH)_2$ , $KHCO_3$ , CaO, $Na_2O$.
7. Writ the chemical formulae of :
   Aluminium, chloride, glucose, sugar, aluminium hydroxide, magnesium oxide, calcium carbonate.
8. Give the name of the element :
   (a) A lustrous non-metal.
   (b) A non-metal which exists as a liquid at room temperature.
   (c) Allotropic form of a non-metal which is a good conductor of electricity.
   (d) A non-metal which forms the largest number of compounds.
   (e) A non-metal required for combustion.
   (f) A non-metal other than carbon which shows allotropy.
9. Classify the substance given in the following figure as elements, compounds and mixture.



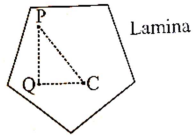

10. Select elements and compounds from the following:
    a) Chlorine (b) Sodium chloride (c) Copper ( d) Ferrous sulphide (Iron sulphide), (e) Zinc, (f) Iodine, (g) Carbon,
11. How can you say that sodium chloride is a compound?
12. Name (a) two metals (b) two non –metals, (c) two metalloids, (d) two compounds and (e) two mixtures.
13. What is meant by man-made elements?
14. Define an element and compound with examples.
15. Explain with examples the groups in which elements are classified.
16. Name a metal which is soft and a non- metal which is hard?
17. Which type of elements show the properties malleability, ductility, comductivity brittleness, lustrous and sonorousness?
18. Explain the terms: (i) Malleable (ii) Ductile (iii) Tensile strength (iv) Brittleness (v) Sonorous.
19. Compare the properties of metals and non- metals with respect to (i) malleability (ii) tensile strength (iv) conductivity and (v) lusture.
20. A sample of water boils at $102^0$C at normal pressure. Is this water pure? Will this water freeze at $0^0$C?

# NEW STANDARD ACADEMY

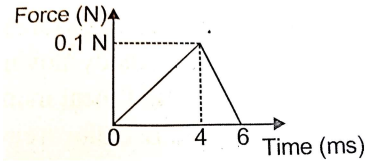
**SEMRI KOTHI SUPER MARKET, RAEBARELI**

**CLASS 09 (Physics) DPP (Academy) 05/08/2024**

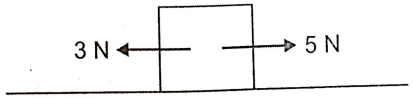
1. A sledge of mass 25 kg is pulled across level ground with a horizontal force of 60 N. The constant force of friction is 20 N. What is the acceleration of the sledge?
2. A force $F_1$ acts on a particle to accelerate it from rest to a velocity v. The force $F_1$ is then replaced by force $F_2$ which decelerates it to rest. Which of the following statements is true?
   a) $F_1$ must be equal to$F_2$ b) $F_1$ may be equal to$F_2$
   c) $F_1$ must be unequal to$F_2$ d) None of these
3. A plane lamina is freely suspended from point P. The weight of the lamina is 2.0 N and the centre of gravity is at C. PC = 0.50 m, PQ = 0.40 m and QC = 0.30 m. The lamina is displaced to the position shown. What is the moment that will cause the lamina to swing?



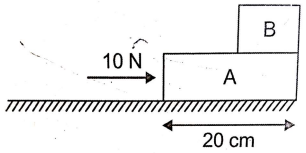

4. A ball of mass 200 g is thrown with a speed of 20 $ms^{-1}$. The ball strikes a bat and rebounds along the same line at a speed of 40 $ms^{-1}$ .Variation of the interaction force, as long as the ball remains in contact with the bat is as shown in the figure. What is the speed of the ball at the instant the force acting on it is maximaximum



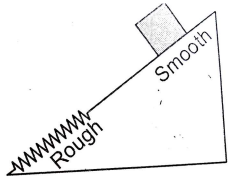

5. A motorcycle and a car are moving on a horizontal road with the same velocity. If they are brought to rest by the application of brakes, which provided equal retardation, then
6. The figure shows two horizontal forces acting on a block on a frictionless floor. If a third horizontal force $\overrightarrow{F_3}$ , also acts on the block, what are the magnitude and direction of $\overrightarrow{F_3}$ , when the block is moving to the left with a constant speed of 5 m/s?




7. A small block B of mass 1 kg is placed on block A of mass 5 kg and length 20 cm as shown in figure. A constant horizontal force of 10 N is applied on block A. If all the surfaces are assumed frictionless and block B is at the right end of block A,




8. A block accelerates down a slope, , as shown in the figure. The upper portion of the slope is smooth and lower portion is rough. On the lower portion, the velocity will be.




9. Two objects. A and B are thrown upwards simultaneously with the same speed. The mass of A is greater than the mass of B. Suppose the air exerts a constant and equal force of resistance on the two bodies, then:
10. A force of 100 N acts on a body so that the body acquire a velocity of 10 m/s after some time Now the force of 100N is replaced by another force which decelerates the body and body come to the rest. Then

INSTRUCTIONS:- In the following questions as Assertion (A) is given followed by a Reason (R). Mark your responses from the following options
(A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
(8) Both Assertion and Reason are true and Reason is not the correct explanation of Assertion
(C) Assertion is true but Reason is false

(D) Assertion is false out Reason is true

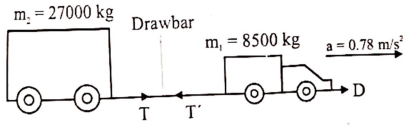
11. **Assertion**: Large force is required to move a body uniformiy along a straight path.
    **Reason:** A body moving with uniform acceleration has a constant force acting on it
12. **Assertion**:- Linear momentum of a body changes when the body is moving in a circle
    **Reason:** In uniform circular motion the velocity changes when the body is moving in a circle.
13. **Assertion:** A player lowers his hands while catching a ball
    **Reason:** Impulse is the time rate of change of momentum.
14. **Assertion:** Mass is a measure of inertia of the body in linear motion
    **Reason:** Smaller the mass, smaller is the force required to change its state.
15. **Assertion:** A cloth covers a table. Some dishes are kept on it. The cloth can be pulled out without dislodging the dishes from the table.
    **Reason:** For every action, there is an equal and opposite reaction.
16. **Assertion:** The value of dynamic friction is less than the limiting friction.
    **Reason:** Once the motion has started, the inertia of rest has been overcome.
17. Match the columu:

Q.1, Match the column :

| Column I | Column II |
|---|---|
| (A) Measure of inertia | (P) Force × time |
| (B) Impulse | (Q) Mass × velocity |
| (C) Momentum | (R) Mass × acceleration |
| (D) Newton's second law of motion | (S) Mass |

Comprehension :

A truck is hauling a trailer along a level road as figure illustrates. The mass of the truck is $m_1 = 8500$ kg and that c the trailer is $m_2 = 27000$ kg.




The two move with an acceleration of $a = 0.78$ m/s$^2$. Ignore the retarding forces of friction and air resistances

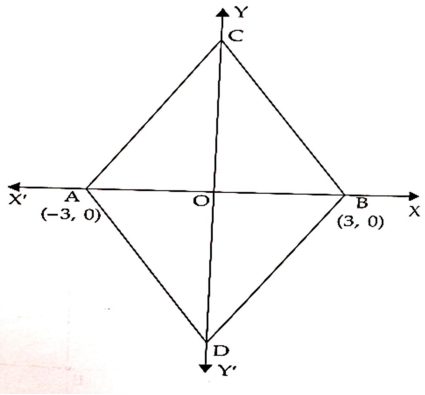
18. The magnitude of the tension in the horizontal drawbar between the trailer and the truck
19. The force D that propels the truck forward :
20. The action and reaction forces are:

# NEW STANDARD ACADEMY

**SEMRI KOTHI SUPER MARKET, RAEBARELI**

**CLASS 09 (MATH'S) DPP (Academy) 05/08/2024**

1. Insert one rational number between $\frac{5}{7}$ *and* $\frac{4}{9}$ and arrange in ascending order.
2. Show that the following terming terminating decimals are rational numbers:
   (a) 0.075 (b) 3.142678
3. Show that the following repeating decimals are rational numbers:
   (a) $0.12\overline{3}$ (b) $0.2\overline{35}$
4. Insert four irrational number between $3\sqrt{2}$ *and* $2\sqrt{3}$
5. If $x = 3\sqrt{2} - 4$, find the value of $x^2 + \frac{4}{x^2}$
6. Is $\frac{6\sqrt{x}+x^{\frac{3}{2}}}{\sqrt{x}}$ a polynomial , $x \neq 0$? Justify your answer.
7. Find the value of $f(x) = 4x^3-3x^{2+} 5x+7$ at $x = \frac{1}{2}$
8. Check whether 0 and 2 are zeroes of the polynomial $x^2 - 2x$
9. Simplify : $(2a +3b)^3 – (2a -3b)^3$.
10. If $a^2 + b^2 + c^2 = 280$ and $ab +bc+ca = \frac{9}{2}$, then find the value of $(a + b + c)^3$.
11. (i) What do you mean by abscissa of a point?
    (ii) Point P is on x-axis and is at a distance of 4 units from y-axis to its left. Write the coordinates of the point P.
    (iii) If the point P(5, a + 3) lies on the x-axis, then find the value of a.
    (iv) The point P(a, b) lies in the fourth quadrant. Which of a or b is greater?
12. In the adjoining figure, ΔABC and ΔADB are equilateral triangles. Find the coordinates of the points C and D.




13. If the coordinates of a point M are (-2,9) which can also be expressed as $(1+x,y^2)$ and $y > 0$, then find in which the quadrant do the following points lie :P(y,x), Q (2,x)
14. In which quadrant does the point(-2,3) lie?
15. Find the reflection of the point(-3,-2) in the y- axis.
16. When 5 times the smaller of two numbers is divided by the larger, the quotient and remainders are 2 and 9 respectively. Form a linear equation in two variables. Write it in the standard from.
17. Let y vary directly as x. If y =12 when x=4, then write a linear equation. What is the value of y when x=5?
18. Write four different solutions of the equation : x+2y = 6.
19. A part of monthly expenses of a family on milk is fixed which is 2600 and the remaining varies with the quantity of milk taken extra at the rate of 52 per litre. Taking the quantity of milk required extra as x litres and the total expenditure on milk as ₹y, write a linear equation in standard form representing the above information.
20. If x = -1, y = 2 is a solution of the equation 2x + 5y = k, then find the value of k.00