

NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 9 (BIOLOGY) DPP (Academy) 12/08/2024

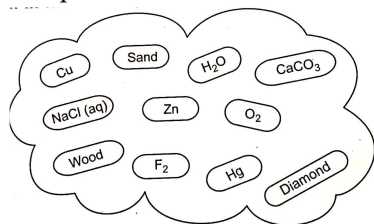
1. Name the term for the fluid substance of the cell
2. Name two examples of unicellular and multicellular organisms
3. What are organelles?
4. Define diffusion
5. What do you mean by selectively permeable membrane?
6. What is isotonic solution?
7. Define pinocytosis.
8. What is the role of cellulose in the cell wall?
9. Why does a cell shrink 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. How is plasmolysis different from deplasmolysis?
17. Name the nucleic acid found in a cell.
18. Give two examples of diffusion in plants.
19. What happens when RBCs are placed in hypotonic solution?
20. Differentiate between active and passive transport.

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CLASS 9 (CHEMISTRY) DPP (Academy) 12/08/2024

1. What are the favourable qualities given to gold when it is alloyed with copper or silver for the purpose making ornaments?
2. Write the names of the compounds: Na_2S , K_2SO_4 , KNO_3 , $\text{Ca}(\text{OH})_2$, KHCO_3 , CaO , Na_2O .
3. Write the chemical formulae of:
Aluminium chloride, glucose, sugar, aluminium hydroxide, magnesium oxide, calcium carbonate.
4. 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.
5. Classify the substance given in the following figure as elements, compounds and mixture.



6. Select elements and compounds from the following:
 - a) Chlorine
 - (b) Sodium chloride
 - (c) Copper
 - (d) Ferrous sulphide(iron sulphide),
7. How can you say that sodium chloride is a compound ?
8. Name (a) two metals ,(b) two non – metals (c) two metalloids,
9. What is meant by man- made elements?
10. Define an element and compound with examples?
11. Explain with examples the groups in which elements are classified.
12. Name a metal which is soft and a non- metal which which is hard?

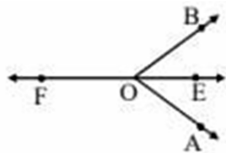
13. Which type of elements show the properties malleability, ductility, conductivity brittleness, lustrous and sonorousness?
14. Explain the term : (i) malleable (ii) Ductile (iii) Tensile strength (iv) Brittleness (v) Sonorous.
15. Compare the properties of metals and non-metals with respect to (i) malleability (ii) ductility (iii) tensile strength.
16. A sample of water boils at 102°C at normal pressure. Is this water pure? Will this water freeze at $^\circ\text{C}$?
17. State physical properties on the basis of which metals and non-metals can be distinguished.
18. Name one solid, one liquid and one gaseous non-metals.
19. State the characteristics by which compounds can be distinguished from mixtures.
20. How can you say that brass is a mixture and not a compound ?

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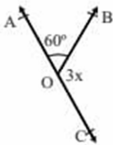
SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 09 (MATH'S) DPP (Academy) 12/08/2024

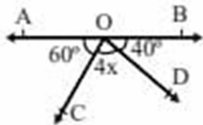
1. In given figure, Ray OE bisects $\angle AOB$ and OF is a ray opposite to OE. Show that $\angle FOB = \angle FOA$.



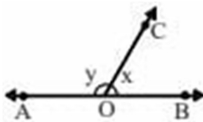
2. In figure, AOC is a line, find x.



3. In figure, AOB is a line, determine x.

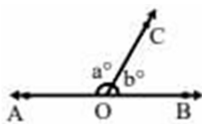


4. In figure, OA and OB are the opposite rays:

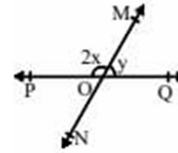


- (i) If $y = 110^\circ$, what is the value of x ?
 (ii) If $x = 75^\circ$, what is the value of y ?

5. In figure, $\angle AOC$ and $\angle BOC$ form a linear pair. If $a - b = 80^\circ$, find the values of a and b.



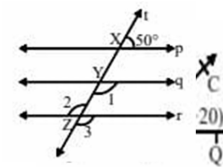
6. In figure, PQ and MN intersect at O.
 (i) Determine y when $x = 60^\circ$
 (ii) Determine x when $y = 40^\circ$



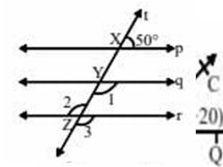
7. In figure, lines AB, CD and EF intersect at O. Find the measures of $\angle AOC$, $\angle COF$.



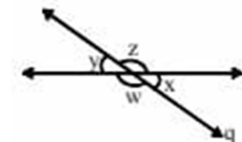
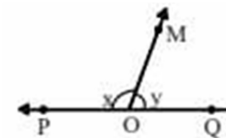
8. In figure, p, q and r are parallel lines intersected by transversal t at X, Y and Z respectively. Find $\angle 1$, $\angle 2$ and $\angle 3$.



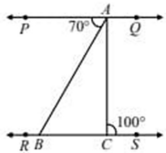
9. In figure, OP and OQ are opposite rays. Find x



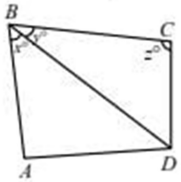
10. In figure, $\angle POM$ and $\angle QOM$ form a linear pair. If $x - 2y = 30^\circ$, find x and y.



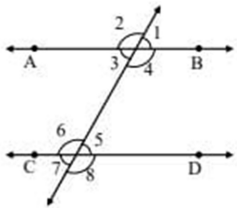
11. In figure, lines p and q intersect at O . If $x = 35^\circ$, find the values of y, z, w .
12. Find the measure of an angle which is 20° more than its complement.
13. Find the measure of an angle which is 40° less than its supplement.
14. Find the measure of an angle, if six times its complement is 12° less than twice its supplement.
15. In Figure $PQ \parallel RS$, $\angle PAB = 70^\circ$ and $\angle ACS = 100^\circ$. Determine $\angle ABC$, $\angle BAC$ and $\angle CAQ$.



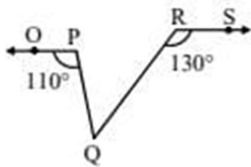
16. In figure $AB \parallel DC$ if $x = \frac{3}{4}y$ and $y = \frac{3}{8}z$, Find the value of x, y and z .



17. In fig, given that $AB \parallel CD$.



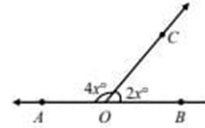
- (i) If $\angle 1 = (120 - x)^\circ$ and $\angle 5 = 5x^\circ$, find the measures of $\angle 1$ and $\angle 5$.
- (ii) If $\angle 4 = (x + 20)^\circ$ and $\angle 5 = (x + 8)^\circ$, find the measure of $\angle 4$ and $\angle 5$.
- (iii) If $\angle 2 = (3x - 10)^\circ$ and $\angle 8 = (5x - 30)^\circ$, determine the measures of $\angle 2$ and $\angle 8$.
- (iv) If $\angle 1 = (2x + y)^\circ$ and $\angle 6 = (3x - y)^\circ$, determine the measures of $\angle 2$ in



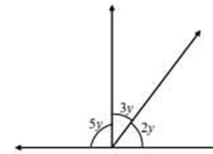
terms of y .

18. In fig, $OP \parallel RS$. Determine $\angle PQR$.

19. In figure $\angle AOC$ and $\angle BOC$ form a linear pair. Determine the value of x .



20. In fig. find the value of y



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CLASS 9 (PHYSICS) DPP (Academy) 12/08/2024

1. A particle is taken to a height of $2R$, above the earth's surface where R_e is the radius of the earth. If it is dropped from this height, what would be its acceleration?
2. Consider a heavenly body whose mass is 3×10^{24} kg (half that of the earth) and radius is 3200 km (half that of the earth). What is the acceleration due to gravity at the surface of this heavenly body?
3. Two bodies A and B of masses m and $2m$ respectively are kept a distance d apart. Where should a small particle be placed so that the net gravitational force on it due to the bodies A and B is zero?
4. Two bodies of masses 1 kg and 2kg respectively are placed at a separation of 1m. Find the accelerations of the bodies assuming that only gravitational forces act.
5. A ball is thrown upward with same initial speed. It goes up to a height of 19.6m and then returns. Find (a) the initial speed (b) the time taken in reaching the highest point, (c) the velocity of the ball one second before and one second after it reaches the maximum height and (d) the time taken by the ball to return to its original position.
6. A body is dropped from some height. It moves through a distance of 24.5 m in the last second before hitting the ground. Find the height from which it was dropped.
7. A ball is dropped from the edge of a roof. It takes 0.1 s to cross a window of height 2.0 m. Find the height of the roof above the top of the window.
8. A ball A is dropped from a 44.1 m height cliff. Two seconds later, another ball B is thrown downwards from the same place with some initial speed. The two balls reach the ground together. Find the speed with which the ball B was thrown.
9. Suppose an astronaut lands on the moon and drops an object from a height of 7.35m from the surface. How much time will it take to reach the moon's surface?
10. Communication satellites move in orbits of radius 44400 km around the earth. Find the acceleration of such a satellite, assuming that the only force acting on it is that due to the earth. Mass of the earth = 6×10^{24} kg.
11. Two 8 kg spherical lead balls are placed with their centres 50cm apart. What is the magnitude of the gravitational force each exerts on the other?
12. The earth attracts the moon. Does the moon also attract the earth? If it does, why does the earth not move towards the moon?
13. How does the gravitational force between the two bodies change, if the distance between them is tripled?
14. (i) State Newton's universal law of gravitation.
(ii) Express the universal law of gravitation mathematically.
(iii) What is SI unit of G ?
15. (i) Why the value of 'g' is greater at the poles than at the equator?
(ii) What is the value of 'g' at the poles?
16. When dropped from the same height a body reaches the ground quicker at poles than at the equator. Why?
17. A boy drops a stone from a cliff, reaches on the ground in 8 seconds. Calculate:
(i) final velocity of stone
(ii) height of cliff
18. Which is greater: the attraction of earth for 1kg of lead or attraction of 1 kg lead for earth?
19. The acceleration due to gravity at the moon's surface is 1.67 ms^{-2} . If the radius of the moon is $1.74 \times 10^6 \text{ m}$ calculate the mass of the moon. Use the known value of G .
20. Suppose you and your friend have mass 50 kg each. Suppose also that both of you are standing such that your centres of gravity are 1m apart. Calculate the force of gravitation between you and your friend. Calculate also the force of gravity acting on you.
(Take $G = 6.67 \times 10^{-11} \text{ Nm}^{-2}$, $g = 9.8 \text{ ms}^{-2}$)