NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI
CLASS 9 (PHYSICS) DPP (Academy) 25/11/2024

1. What is sound and how is it produced?
2. Describe with the help of a diagram. How compressions and rarefactions are produced in air near a source of sound.
3. Cite an experiment to show that sound needs material medium for its propagation.
4. Why is sound wave called a longitudinal wave?
5. Which characteristic of the sound helps you to identify your friend by his voice while sitting with others in a dark room?
6. Flash and thunder are produced simultaneously. But thunder is heard a few seconds after the flash ist seen. Why?
7. A person has a hearing range of 20 Hz to 20 kHz. What are the typical wavelengths of sound waves in air corresponding to these two frequencies? Take the speed of sound in air as 344 ms^{-1}
8. Two children are at opposite ends of an aluminium rod. One strikes the end of the rod with a stone. Find the ratio of time taken by the sound waves in air and in the aluminium to reach the second child.
9. The frequency of a source of sound is 100 Hz. How many times does it vibrate in a minute.
10. When a sound is reflected from a distant object, an echo is produced. Let the distance of the reflecting surface and the source of sound production remains the same. Do you hear echo sound on a hotter day?
11. Does sound follow the same laws of reflection as light does?
12. Give two practical applications of reflection of sound waves.
    (i) Megaphone
    (ii) Hearing aid.
13. A stone is dropped from the top of a tower 500 m high into a pond of water at the base of the tower. When is the splash heard at the top? Given g = 10 ms and speed of sound = 340 ms^{-1}.
14. A sound wave travels at a speed of 399ms^{-1} If its wavelength is 1.5 m, what is the frequency of the wave? Will it be audible?
15. What is reverberation? How can it be reduced?
16. What is loudness of sound? What factors does it depend on?
17. Explain how bats use ultrasound to catch a prey.
18. How is ultrasound used for cleaning?
19. Explain the working and application of a sonar.
20. A sonar device on a submarine sends out a signal and receives an echo 5 s later. Calculate the speed of sound in water if the distance of the object from the submarine is 3625 m.

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CLASS 9 (Chemistry) DPP (Academy) 25/11/2024

1. Write the molecular formulae of all the compounds that can be formed by the combination of the following ions:
   Cu^{2+}, Na^{+}, Fe^{3+}, CI^{-}, SO_4^{2-}
2. What are chemical reactions according to the Law of conservation of mass ?
3. Write the chemical formulae of the following:

(a) Magnesium sulphate (6) Calcium oxide (c) Sodium sulphide (a) Aluminium phosphate (e) Potassium chloride (f) Calcium carbonate

4. A compound XHis formed by the combination of an element X with hydrogen . Find the valency of the element . State the formula of the compound formed by the combination of (a) X with nitrogen (b) X with oxygen.
5. Write the chemical names of the following compounds :
   (a) K_2SO_4 (b) $Mg(PO_4)_2$ (c) NH_4Cl
6. How did Berzelius assign symbols to the elements ?
7. Give one point of difference between an atom and an ion.
8. Give one example each of a polyatomic cation and a polyatomic anion.
9. Identify the correct chemical name of $FeSO_3$ from the given names - Ferrous sulphate, Ferrous sulphide, Ferrous sulphite.
10. Write the chemical formula for the chloride of magnesium
11. Define atomic mass unit .How is it linked with relative atomic mass ?
12. How will you identify the presence of atoms if they do not exist independently for most of the elements ?
13. In a reaction, 5.3 g of sodium carbonate reacted with 6.0 g of ethanoic acid. The products were 2.2 g of carbon dioxide, 0.9 g of water and 8.2 g of sodium ethanoate. Show that these observations are in agreement with the law of conservation of mass.
14. Hydrogen and oxygen combine in the ratio of 1: 8 by mass to form water. What mass of oxygen gas would be required to react with 3 g of hydrogen gas?
15. Which postulate of Dalton's Atomic theory is the basis of law of conservation of mass ?
16. Which postulate of Dalton's Atomic theory can explain the law of definite proportions ?
17. Define atomic mass unit.
18. Why is not possible to see an atom with naked eye ?
19. What is meant by the term chemical formula ?
20. Calculate the molecular masses of :
    (i)H_2 (ii) O_2 (iii) Cl_2

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CLASS 9 (BIOLOGY) DPP (Academy)25/11 /2024

1. Define tissue.
2. What is the basis for the classification of plant tissues?
3. Name the regions where meristematic tissues are found in plants.
4. What are the two functions of apical meristem?
5. What are permanent tissues in plants?
6. What are the constituents of the phloem?
7. Name the types of simple tissues.
8. What is the function of meristematic tissue?
9. Differentiate between apical meristem and lateral meristem, in terms of their functions.
10. Give two functions of collenchyma.
11. Where are intercalary meristems located? Give examples.
12. What are tracheary elements? Describe their functions.
13. List the functions of tissue.
14. What are simple tissues? What are the different types of simple tissues?
15. Tabulate the differences between plants and animal tissues.
16. What are meristematic tissues? Give their classification based on their position in the plant body.
17. What do you understand by complex tissue? Classify and explain its different types in plants.
18. Explain different types of elements present in phloem.
19. Differentiate between collenchyma. Parenchyma and collenchyma.\
20. What is the function of chlorenchyma

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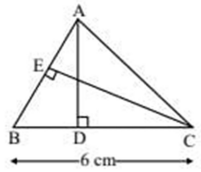
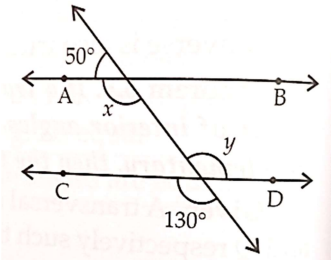
CLASS 9 (MATH'S) DPP (Academy) 25/11/2024

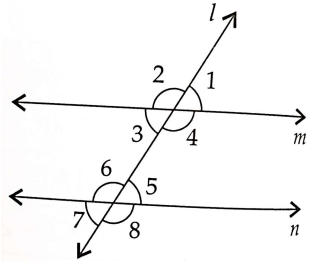
1. If semiperimeter of a triangle is 60 cm & its two sides are 45 cm ,40 cm then find third side.
2. If one side from two equal sides of a Δ is 14 cm and semiperimeter is 22.5 cm then find the third side.
3. Find the length of AD in given figure, if EC-4 cm and AB = 5cm



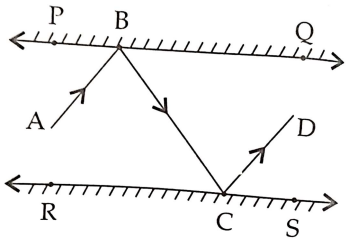
4. Find the area of a triangle whose sides are of lengths 52 cm, 56 cm and 60 cm respectively.
5. Using Heron's formula, find the area of an equilateral triangle of side a units.
6. Find the percentage increase in the area of a triangle if its each side is doubled.
7. The lengths of the sides of a triangle are in the estio 3 : 4 : 5 and its perimeter is 144 cm. Find (i) the area of the triangle and (ii) the height corresponding to the longest
8. Find the area of an isosceles triangle each of whose equal sides is 13 cm and whose base is 24 cm.
9. A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30 m and its longer diagonal is 48 m, how much area of grass field will each cow be getting?
10. Find the area of a trapezium whose parallel sides 25 cm, 13 cm and other sides are 15 and 15 cm.
11. If x = -1, y = 2 is a solution of the equation 2x + 5y = k, then find the value of k.00
12. In the adjoining figure ,find the values of x and y and then show that AB|| CD.



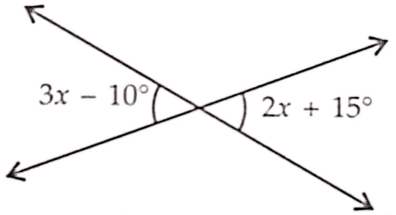
13. In the adjoining figure, angle ∠1 = 60°and ∠6 = 120°. Show that lines m and n are parallel. (Exemplar)



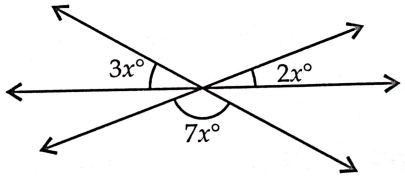
14. Prove that the lines which are perpendicular to the same line, are parallel to each other
15. In the adjoining figure. PQ and RS are two plane mirrors placed parallel to each other. An incident ray AB strikes the mirror PQ at B, the reflected ray moves along the path BC and strikes the mirror RS at C and again reflected back along CD. Prove that ABCD.



16. In the adjoining ,find the value of x



17. In the adjoining ,find the value of x



18. If the angles of a triangle are in the ratio 2:4:3, then find the measure of the smallest angles.
19. In ΔABC if angle B = 60° angle C = 80° and the bisectors of angle ABC and angle ACB meet at O, then find the measure of angle BOC
20. In triangle ABC , if bisectors of angle ABC and angle ACB intersect at O at an angle of 110°, then find the measure of angle A