

NEW STANDARD ACADEMY

Marks: 80

Date : 17-11-25

CLASS : 9TH

Time: 3 hours.

PHYSICS

1. Why we cannot hear each other on the moon?
2. Sound is produced when your school bell is struck with a hammer. Why?
3. Give the SI units for work, energy and power. A man whose mass is 30 kg climbs up 30 steps of the stairs in 30s. If each step is 12.5 cm in height, calculate the power used in climbing the stairs. ($g = 10 \text{ m/s}^2$)
4. In a house 2 bulbs of 50 W each are used for 5 hours a day and two 70W each fans are used 10 hours a day. Calculate the units consumed in a month of 30 days.
5. Define:
(a) Power (b) Work done
(c) Kinetic energy
6. The velocity of a body moving in a straight line is increased by applying a constant force F, for some distance in the direction of the motion. Prove that the increase in the kinetic energy of the body is equal to the work done by the force on the body.
7. Seema tried to push a heavy rock of 100 kg for 200 s but could not move it. Find the work done by Seema at the end of 200s.
8. 1kW motor is used to pump water upwards from a well 10 m deep. Calculate the quantity of water pumped out per second.
9. Define longitudinal and transverse waves with the graph of their propagation?
10. Name the physical quantity measured in horse-power. 1 HP is equal to how much watt?
2. Give the formulae of the compounds formed from the following sets of elements.
(a) Calcium and fluorine
(b) Carbon and chlorine
3. Find the ratio by mass of the combining elements in the following compounds:
(a) CaCO_3 (b) H_2SO_4
4. What do you understand by chemical formulae of elements and molecular compounds?
5. What mass of silver nitrate will react with 5.85 g of sodium chloride to produce 14.35 g of silver chloride and 8.5 g of sodium nitrate if the law of conservation of mass is true?
6. What is the difference between chlorine atom and chloride ion ?
7. Give the example of :
(i) trivalent cation, monovalent anion; and the compound formed by their combination
(ii) monovalent cation, trivalent anion, and the compound formed by their combination.
8. A metal shows the valency of 2 as well as 3. Write the formulae of its chlorides, oxides, sulphates and phosphates.
9. 0.44 gram of a hydrocarbon on oxidation gives 0.88 g of CO_2 and 1.8 gram of H_2O . Do these data confirm the law of conservation of mass?
10. The atomic mass of many elements is in fractions, why ?

CHEMISTRY

1. Write the molecular formulae for the following compounds:
(a) Calcium (II) phosphate
(b) Aluminium (III) nitrate
(c), Iron (III) sulphide
(e) Mercury (II) chloride

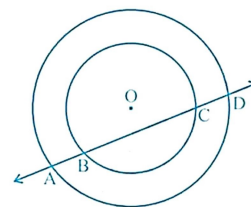
BIOLOGY

1. Why is stratified squamous epithelium found in the skin but not in the lining of the intestine?
2. Differentiate between ligament and tendon in terms of structure and function.
3. How does cardiac muscle differ from skeletal muscle in terms of control and structure?

4. Why is blood considered a connective tissue even though it is fluid?
5. State one structural adaptation of neuron that helps in rapid transmission of impulses.
6. Why does cartilage heal slowly compared to bone?
7. Which connective tissue stores fat? Explain
8. What is the functional unit of nervous tissue?
9. Which type of epithelium lines the kidney tubules?
10. Name two location where ciliated epithelium is found. Also give the function

MATH'S

1. What length of tarpaulin 3 m wide will be required to make conical tent of height 8 m and base radius 6 m? Assume that the extra length of material that will be required for stitching margins and wastage in cutting is approximately 20 cm (Use $\pi = 3.14$)
2. The diameter of the moon is approximately one fourth of the diameter of the earth. Find the ratio of their surface areas.
3. A right triangle ABC with sides 5 cm, 12 cm and 13 cm is revolved about the side 12 cm. Find the volume of the solid so obtained.
4. A dome of a building is in the form of a hemisphere. From inside, it was white-washed at the cost of 4989.60. If the cost of white-washing is 20 per square metre, find the
 - (i) inside surface area of the dome,
 - (ii) volume of the air inside the dome.
5. Find the area of a triangle le two sides of which are 18cm and 10cm and the perimeter is 42cm.
6. Sides of a triangle are in the ratio of 12:17:25 and its perimeter is 540cm. Find its area
7. Two circles of radii 5 cm and 3 cm intersect at two points and the distance between their centres is 4 cm. Find the length of the common chord.
8. If a line intersects two concentric circles (circles with the same centre) with centre O at A, B, C and D, prove that $AB = CD$.



9. Three girls Reshma, Salma and Mandip are playing a game by standing on a circle of radius 5m drawn in a park. Reshma throws a ball to Salma, Salma to Mandip, Mandip to Reshma. If the distance between Reshma and Salma and between Salma and Mandip is 6m each, what is the distance between Reshma and Mandip?
10. There is a slide in a park. One of its side walls has been painted in some colour with a message "KEEP THE PARK GREEN AND CLEAN" . If the sides of the wall are 15 m, 11 m and 6 m, find the area painted in colour.

