

# NEW STANDARD ACADEMY

Marks: 80

Date : 04-08-25

CLASS : 9<sup>TH</sup>

Time: 3 hours.

## PHYSICS

1. How does the force of gravitation between two object change when the distance between them is reduced to half?
2. What is the magnitude of the gravitational force between the earth and a 1 kg object on its surface (mass of the earth is  $6 \times 10^{24}$  kg and radius of the earth is  $6.4 \times 10^6$  m)
3. If the Moon attracts the earth, why does the earth not move towards the Moon?
4. What happens to the force between two objects if the mass of one object is doubled.
5. What is the acceleration of free fall?
6. Amit buys few grams of gold at the poles as per the instruction of one of his friends .He hand over the same when he meets him at the equator .Will the friend agree with weight of gold bought? If not ,why?
7. Why will a sheet of paper fall slower than one that is crumpled in to a ball?
8. Gravitational force on the surface of the moon in only 1/6 as strong as gravitational force on the earth. What is the weight in newton of a 10kg object on the moon and on the earth?
9. A ball is thrown vertically upward with a velocity of 49m/s. Calculate the maximum height to which it rises.
10. A stone is released from the top of a tower of height 19.6m. Calculate its final velocity just before touching the ground.

## CHEMISTRY

1. Define solute and solvent with examples.
2. What is solute and solvent in (a) brass(b) tincture iodine (c) air?
3. A solution contains 6 mL methanol in 0.074 litre of water. Calculate the concentration of the solution.
4. 10mL of acetone is present in 150 mL of its aqueous solution . Calculate the concentration of the solute .
5. 10 mL of ethanol is mixed with 90 mL of water. What is the volume percentage of ethanol in the solution?
6. How much water should be mixed with 12 mL of methanol so as to give a 12%(V/V) solution of methanol?

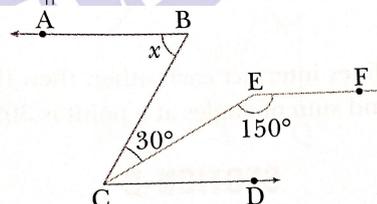
7. 5mL of acetone is present in 50 mL of its aqueous . what is the concentration of this solution?
8. List the points of differences between homogeneous and heterogeneous mixtures.
9. Which of the following are solutions? Muddy water, sea- water, air, aerated drinks , Coal and soil.
10. What is the difference and similarity in a (1) solution of sugar in water and (2) solution of sand in water?

## BIOLOGY

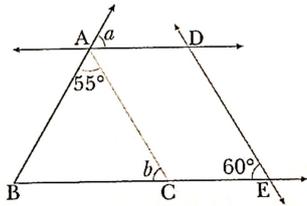
1. Define the term "tissue".
2. What is the utility of tissues in multicellular organisms?
3. Which tissue Make the husk of coconut?
4. What is a vascular bundle? Name the tissues forming vascular bundles.
5. What are the constituents of phloem?
6. Write any two functions of xylem and phloem
7. What is apical-meristem
8. Give the function of meristematic tissues
9. What is difference between permanent tissues and meristematic tissues
10. What is collenchyma give its function?

## MATHS

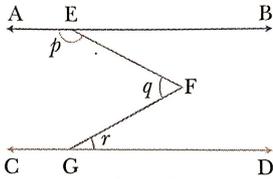
1. In the adjoining figure  $AB \parallel CD$  and  $AB \parallel EF$ . The value of  $x$  is



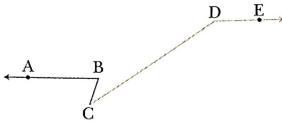
2. One of the angles of a pair of supplementary angles is  $18^\circ$  more than its supplement. Find the angles.
3. In the figure  $AD \parallel BE$  and  $AC \parallel DE$ , find  $a$  and  $b$ .



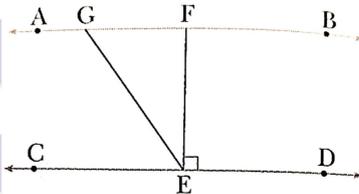
4. In the given figure,  $AB \parallel CD$ . Prove that  $p+q-r = 180^\circ$



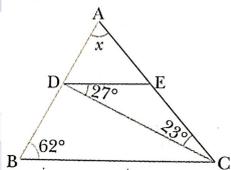
5. In figure  $AB \parallel DE$ ,  $\angle ABC = 85^\circ$ ,  $\angle CDE = 135^\circ$ , find  $\angle BCD$



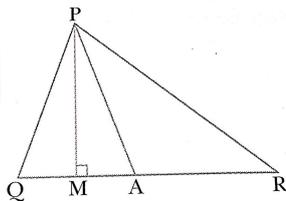
6. In a triangle ABC,  $\angle A = \frac{1}{2} \angle B = \frac{1}{6} \angle C$ . What will be the measure of  $\angle A$ ?
7. IN the given figure, if  $AB \parallel CD$ ,  $EF \perp CD$  and  $\angle GED = 126^\circ$  Find  $\angle AGE$ ,  $\angle GEF$  and  $\angle FGE$ .



8. In the adjoining diagram,  $DE \parallel BC$ . Find the value of x.



9. In figure  $\angle Q > \angle R$ , PA is the bisector of  $\angle QPR$  and  $PM \perp QR$ .  
prove that  $\angle APM = \frac{1}{2}(\angle Q - \angle R)$ .



10. In figure, lines PQ and RS intersect each other at point O, ray OA and ray OB bisect  $\angle POR$  and  $\angle POS$  respectively. If

$\angle POA : \angle POB = 2:7$ , then find  $\angle SOQ$  and  $\angle BOQ$ .

