NEW STANDARD ACADEMY

Marks: 80

Date : 11-08-25 **CLASS : 9TH** **Time: 3 hours.**

PHYSICS

1. Define acceleration due to gravity.
2. Which object falls to the Earth first, small or big?
3. What is the reference value of g? Where is it taken ?
4. Value of G on earth is 6.673×10^{-11} $Nm^2 kg^{-2}$, what is the value of G on the surface of the moon?
5. How does the value of g change on moving (a) away from the surface of the earth, and (b) toward the centre of the earth ?
6. What is weight ? State the direction in which it acts.
7. On what factors does the weight of a body depend ? Can a body have mass but no weight ?
8. A coin and a piece of paper are dropped simultaneously from the same height. Which of will touch the ground first? What will happen if they are dropped in vacuum ? Give reason answer.
9. An apple attracts the earth and the earth also attracts the apple towards its centre. Then, why only apple falls towards the earth but earth is not moved towards the apple ?
10. Differentiate between mass and weight.

CHEMISTRY

1. Find molarity of 40 g NaOH dissolved in 250 mL solution . Given that molar mass of NaOH is 40 g/ mol.
2. 12 grams of potassium sulphate dissolves in 75 grams of water at 60°C. What is the solubility of potassium of the solute.
3. A solution contains 40g of common salt in 320g of water. Calculate the concentration in terms of mass by mass percentage of the solution.(m.m of Common salt = 58.5)
4. Fog and cloud are both colloidal in nature. How do they differ from each other?
5. Classify the following into elements, compounds and mixtures.
   (a) Sodium (b) Soil
   (c) Silver (d) Calcium carbonate
   (e) Silicon (f) Air
   (g) Soap (h) Carbon dioxide
6. Cheese is an example of one type of colloidal solution, name it. Give reason.
7. Is water an element or a compound? Give reason in support of your answer.
8. Priya tested the solubility of three different substances at different temperatures and collected the data as given below in the table (results are given as grams of substance dissolved in 100 grams of water to form a saturated solution).

Substance Dissolved	Temperature in K				
	283	293	313	333	353
	Solubility				
Potassium nitrate	21	32	62	106	167
Sodium chloride	36	36	36	37	37
Potassium chloride	35	35	40	46	54
Ammonium chloride	24	37	41	55	66

   (a) What mass of potassium nitrate would be needed to produce a saturated solution of potassium nitrate in 50 grams of water at 313 K?
   (b) Priya makes a saturated solution of potassium chloride in water at 353 K and leaves the solution to cool at room temperature. What would she observe as the solution cools? Explain.
   (c) Find the solubility of each salt at 293 K. Which salt has the highest solubility at this temperature?
   (d) What is the effect of change of temperature on the solubility of a salt?
9. The liquid air has three components X, Y and Z whose boiling points are -186°C, -183°C and -196°C, respectively. When liquid air is fed into a tall fractional distillation column from near its bottom and warmed up slowly:
   (a) Which component will be collected from near the bottom of the fractional distillation column? Why?
   (b) Which component will be collected from the top part of the fractional distillation column? Why?
   (c) Which component will be collected from the middle part of the fractional distillation column? Why?
   (d) What could the component X, Y and Z be?
10. The given mixture contains three constituents A, B and C. The constituent A is a yellow coloured, solid element which dissolves in a

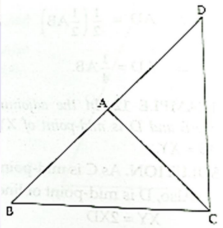
liquid D. The constituent B is a blue coloured salt which is insoluble in liquid D but dissolves easily in another liquid E. The constituent C is a liquid which is used in cooking food and forms a solid fat on hydrogenation.
(a) What do you think could constituent A, and liquid D be?
(b) What could constituent B, and liquid E be?
(c) What could liquid C be?
(d) How will you separate the mixture containing A, B and C?

BIOLOGY

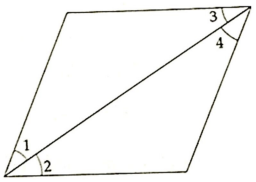
1. Give the two function of epithelial tissue
2. What is the function of compund epithelium give the example
3. Give the difference between simple and compound epithelium
4. What is the function of squamous epithelium
5. What is function of ciliated columnar epithelium
6. What is the function of glandular epithelium
7. Draw the label diagram of columnar epithelium
8. What is the difference between columnar and cubodial epithelium
9. Epithelium supported by which membrane and tissue,give the name
10. Draw the labelled diagram of a squamous epithelium

MATHS

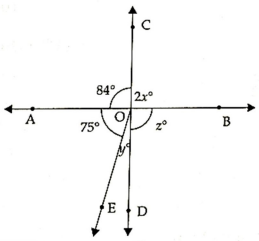
1. In the adjoining figure, if AB = AD and AC = AD, then prove that AB = AC. State Euclid's axiom to support this.



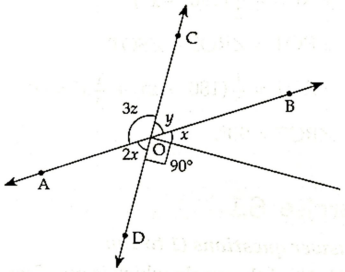
2. In the adjoining figure, if ∠ 1 = ∠3 ∠2 = ∠4 and ∠3 = ∠4, show that ∠ 1 = ∠2 using Euclid's axiom.



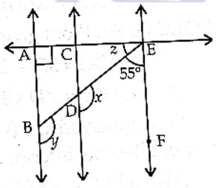
3. It is given that angle XYZ = 64° and XY is produced to a point P. Draw a figure from the given information. If ray YQ bisects ∠ZYP, then find ∠XYQ and reflex ∠QYP.
4. In the figure given below, lines AB and CD intersect each other at O. Find the values of x, y and z.



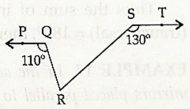
5. In the figure given below, AB and CD are two straight lines which intersect each other at the point O. Find the values of x, y and z.



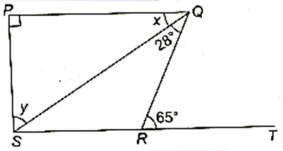
6. EXAMPLE 11. In the adjoining figure, AB || CD and AB || EF. If EA ⊥ BA and ∠BEF = 55°, find the values of x, y and z.



7. In the adjoining figure, PQ || ST, ∠PQR = 110° and ∠RST=130°. Find ∠QRS.



8. 19. In the adjoining figure, if PQ ⊥ PS , PQ || SR, ∠SQR = 28^0 and ∠ QRT = 65^0 then the values of x and y are:



9. 18. In ΔABC, ∠A- ∠B = 16^0 and ∠C- ∠A = 34^0 , find all angles of the triangle.
10. In the given figure, prove that x = a + b + c.