BALUNI PUBLIC SCHOOL

Grade – XII A   **Date:-**

S.No	Subject	Holiday Homework
1.	English	Solve unseen passages on page 26, 28 & 31(Evergreen pull out worksheet) Writing Section - Notice writing - complete Assignment 3, page 128, question - 1, 2,3 & 4 Assignment -4, page- 128- questions - 5, 6, 7 & 8. Page -180 question 1, Assignment 11- question -2 Page 218, assignment 25, q.1 Page 259, assignment- 36, q.2. All work to be done in pull out worksheets vol.1
2.	Physics	Holiday homework for class 12 Complete following physics practical in lab manual 1.To determine resistivity of wires by plotting a graph between potential difference versus current. 2.To find resistance of a given wire / standard resistor using metre bridge. 3.To verify the laws of combination (parallel) of resistances using a metre bridge 4. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. 5.To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v. 6.To find the focal length of a concave lens, using a convex lens.

		7.To determine angle of minimum deviation for a given prism by plotting a graph
		8. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.
		Activities to be written in Milky file
		1.1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
		2. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
		3. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
		4. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
		5. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
		6. To assemble the components of a given electrical circuit.

3.	Chemistry

SECTION - 1

VERY - SHORT - ANSWER QUESTIONS

1. What is desalination?
2. Modify the equation $\Delta T_b = K_b\,m$, by making use of Van't Hoff's factor.
3. Name the type of azeotrope formed when nitric acid is mixed with water.
4. What is molarity?
5. Define the term vapour pressure of a liquid.
6. Write one example each of the non ideal solutions showing (i) positive and (ii) negative deviation from the ideal behaviour.
7. Mention one advantage in using molarity as a measure of strenght of solution.
8. Define the term 'reverse osmosis'.
9. Name the cations responsible for maintaining proper osmotic pressure balance inside and outside of the cells of organisms.
10. What do you mean by freezing point?
11. Why are soda water and soft drink bottles sealed under pressure?
12. Why is oxygen diluted with helium as a breathing gas for deep sea diving?
13. Describe the functioning of haemoglobin (as a carrier of oxygen) in light of Henry's Law.
14. State the formula relating pressure of a gas with its mole fraction in a liquid solution in contact with it.
15. What is the effect of temperature on the solubility of gases in liquids?
16. Why does the solubility of gases in liquids decrease with rise in temprature?
17. Addition of one liquid to another causes a decrease in its vapour pressure? Explain why.
18. What temperature change is expected during the mixing of two liquids whose solution shows a negative deviation from Raoult's law?
19. Name the solid that separates first when saline water is slowly frozen.
20. State Raoult's law for dilute solutions.

SHORT - ANSWER - QUESTIONS

1. Write the term in which the concentration of atmospheric pollutants in cities is often expressed.
2. Water and alcohol molecules exhibit complete miscibility. Why?
3. How does the aquatic life survive in lakes, rivers and oceans even when they freeze?
4. Gases very often tend to be less soluble in liquids as the temperature is raised. Why?
5. Name two substances, which form nearly ideal solution.
6. What is substitutional solid?
7. Why is the vapour pressure of a solvent lowered on addition of a non-volatile solute to it?
8. Give the structural arrangement of a mixture of chloroform and acetone to form a solution.
9. Draw a graph between the partial pressure of HCl gas and mole fraction of HCl in cyclohexane, depicting the slope as Henry's Law Constant (K_H).
10. State and explain Raoult's law for a solution containing non-volatile components.
11. Calculate molarity and molality of a 13% solution (by weight) of sulphuric acid? Its density is 1.020 g cm^{-3}. (Atomic mass of H = 1, O = 16, S = 32 a.m.u.]
12. Differentiate between molarity and molality of a solution. When and why is molality preferred over molarity in handling solutions in Chemistry?

10. The depression freezing point of 0.1 m AB_2 electrolyte solution is 0.558 K. What conclusion can you draw about its molecular state is solution, K_f for water of 1.86 K kg mol^{-1}.
11. At 25°C, the vapour pressure of water is 23.5 mm Hg. Calculate the vapour pressure at the same temperature over 5% aqueous solution of urea $[CO(NH_2)_2]$.
12. The vapour pressure of pure benzene is 120 mm Hg at 30°C. Calculate the vapour pressure of the solution prepared by dissolving 6.4 g naphthalene in 39 g benzene (C_6H_6). Also calculate the vapour pressure lowering of benzene.
13. The vapour pressure of pure water is 32 mm Hg at 31°C. The vapour pressure of a solution, a non-volatile solute is 30 mm Hg at 31°C. Calculate the molality of the solution.
14. The vapour pressure of pure water at 31°C is 32 mm Hg. When 2 g of a non-volatile solute was dissolved in 36 g of water, the vapour pressure of the solution was found to be 31.5 mm Hg. Calculate the molecular mass of the solute.
15. Two liquids A and B form ideal solutions. At 300 K, the vapour pressure of a solution containing 1 mole of A and 3 moles of B is 550 mm Hg. At the same temperature if one mole of B is added to this solution, the vapour pressure of the solution increases by 10 mm Hg. Determine the vapour pressure of A and B in their pure states.
16. The vapoure pressure of pure benzene at a certain temperture is 0.850 bar, a non-volatile, non-electrolyte solid weighing 0.5 g is added to 39.0 g of benzene (molar mass 78 g/mol). The vapour pressure of the solution then is 0.845 bar. What is the molecular mass of the solid substances?
17. Calculate the freezing point of a solution containing 18 g glucose, $C_6H_{12}O_6$ and 68.4 g surcose, $C_{12}H_{22}O_{11}$ in 200 g water. The freezing point of pure water is 0°C and cryoscopic constant of water is 1.86Km^{-1}.
18. Calculate the amount of iodine that should be dissolved in 100 g of chloroform in order to raise its boiling point by 0.4°C. The boiling point of pure chloroform is 61.2°C and molal elevation constant is 3.63 K m^{-1}.
19. The melting point of camphor is 177.5°C while that of a mixture of 1 g naphthalene (molecular mass 128 g mol^{-1}) and 10 g of camphor is 147°C. Calculate the cryoscopic constant of camphor.
20. When 2.74 g of phosphorus is dissolved in 100 cm^3 of carbon disulphide, the B.P. is 46.71°C. The normal B.P. of carbon disulphide is 46.30°C and its density is 1.261 g cm^{-3}. Determine molecular formula of phosphorus. Molal elevation constant for 100 g carbon disulphide is 23.4K kg mol^{-1}.
21. 18 g of glucose, $C_6H_{12}O_6$ is dissolved in 1 kg of water in a saucepon. At what temperature will the water boil (1.013 bar pressure) K_b for water is 0.52 K kg mol^{-1}.
22. The boiling point of bezene is 353.23 K, when 1.80 gram of a non-volatile solute was dissolved in 90 g of benzene, the boiling point is raised to 354.11 K. Calculate the molar mass of the solute, K_b for benzene is 2.53 K kg mol^{-1}.
23. 45 g of ethylene glycol $C_2H_6O_2$ is mixed with 600 g of water. Calculate

    (a) the freezing point depression

    (b) the freezing point of the solution

    $(K_f = 1.86$ K kg $mol^{-1})$.
24. 1.00 g of a non-electrolyte solute dissolved in 50.5 g of benzene lowered the freezing point of benzene by 0.40 K. The freezing point depression constant of benzene is 5.12 K kg mol^{-1}. Find the molecular mass of the solute.
25. Calculate the osmotic pressure of a decimolar solution of cane-sugar at 25°C.

    (R = 0.0821 L atm K^{-1} mol^{-1}).
26. Calculate the osmotic pressure of a solution made by mixing 36 g glucose (molecular mass 180) and 17.1 g sucrose (Molecular mass 342) in 250 cm^3 water at 47°C. R = 0.082 L atm K^{-1} mol^{-1}.
27. Osmotic pressure of a solution made by dissolving 3.00 mg sample of protein in 10.0 cm^3 of solution is

found to be 40 mm Hg at 25°C. Calculate the molecular mass of the protein.
28. A 0.25 m aqueous solution of Mayer's reagent (K_2HgI_4) is prepared and its freezing point is found to be -1.41°C. Suggest a possible dissociation reaction that takes place when K_2HgI is dissolved in water. K_f for water is 1.86 K m^{-1}.
29 Calculate Van't Hoff factor for a certain electrolyte AB at a concentration where it is 10% ionized.
30. 2 g of C_6H_5COOH dissolved in 25 g of benzene shows a depression in freezing point equal to 1.62 K. Molar depression constant for benzene is 4.9 K kg mol^{-1}. What is the percentage associated of acid if it forms double molecules (dimer) in solution.

4.	**Maths**	Do activities in your maths manual *From chapter 1* Activity-1 Activity-2 Activity-3 Activity-4 *From chapter 2* Activity-1 Activity-2
5.	**Biology**	**1#**Make a project on 'ANY ONE', of the following Topic from Biology Lab Manual and wirte the experiment 1 ,2,3,4,5 in biology lab manual . #write all these questions in fair note book Question 1 Any seven Differences between Embryo and Endosperm? Question 2 Difference between egg cell and secondary nucleus? Question 3 Any five Difference between pollination and fertilization ? **#**Project File Work(explaination of working model) and working model is circulatory system (Heart).
6.	**I. P**	Prepare a digital Presentation on all topics of *Introduction to Computer Networks* (Unit-3) and also make a soft & hard file for the same.
7.	**Physical Education**	No. Holiday Homework

Class Teacher   Principal