KERALA PUBLIC SCHOOLS

STD. : XII

HOME ASSIGNMENT

SUBJECT	TOPIC	INSTRUCTIONS
ENG LANG	Statement of Purpose/SoP. What is it? Where, When and Why is it needed and finally How to write a good SoP. https://youtu.be/qhBgvVMvPH8	Write a Statement of Purpose in about 300 words as you are interested in getting admission in a reputed Medical Institute. Remember you are a student of Bio science, Class XII.
ENG LIT	PROSE : To Build a Fire by Jack London . The lengthiest story has been made interesting through a simple narration and short video. Have a look at how a solitary hiker goes through this untested expedition. https://youtu.be/7gF9jKtAyiU	1. Find out the minimum temperature drops and maximum rises in the Klondike region of the Yukon Territory in Canada. Surf the Internet to know how people survive in such extremely hostile temperatures. 2. List in bullets, the details of how many efforts got wasted and how he managed to overcome the difficulties. 3. Interesting fact : People die of SUNBURN in even cold places with temperatures below 0 degrees – WHY ?
HINDI LANG	वाक्य - शुद्धिकरण मुहावरे से वाक्य निर्माण	वाक्य – शुद्धिकरण (VEDEO LINK) https://www.youtube.com/watch?v=2K8kPt54XX8 मुहावरे (VEDEO LINK) https://www.youtube.com/watch?v=D6bgjWBVUPs
HINDI LIT	P.T क्या निराश हुआ जाए? FIRST TERM साखी, क्या निराश हुआ जाए, जाग तुझको दूर जाना है, पुत्र- प्रेम, बाल- लीला, भक्तिन, एक फूल की चाह, उद्यमी नर, गौरी, शरणागत, संस्कृति क्या है? आषाढ़ का एक दिन - Pg- 1 - 90	सम्पूर्ण पाठ को ध्यानपूर्वक पढ़कर भावों को समझना। -पाठ से सम्बन्धित प्रश्नोत्तर को लिखने का प्रयास करना। rough note book में। प्रश्न - क्या निराश हुआ जाए? पाठ के लेखक कौन हैं? इसके माध्यम से उन्होंने क्या संदेश दिया है? कानून और धर्म में अंतर बताते हुए यह बताएँ कि कौन हितकर है? क्या निराश हुआ जाए? (VEDEO LINK) https://www.youtube.com/watch?v=do7YhD0iBTI
MATHS	Ch - 6 : Matrices Ch - 7 : Determinants Ch - 8 : Applications of Matrices and Determinants	Determinant of 2 X 2 and 3 X 3 Matrices - https://youtu.be/SJOTtb1FTfs Inverse of matrix using formula - https://youtu.be/AMLUikdDQGk Solve the system of equations - https://youtu.be/NNmiOoWt86M Properties of determinant - https://youtu.be/a2z7sZ4MSqo

SUBJECT	TOPIC	INSTRUCTIONS
PHY	Topic: Electrostatics: Coulomb's Law, Electric Field due to Dipole on an axial line and equatorial line, Electric Flux, Gauss Law and its application. https://www.youtube.com/watch?v=2GQTfpDE9DQ&list=PLSQl0a2vh4HCZWzXnL-X35c8oELmByZMA&index=3	Write down the derivations and the formulas of the mentioned topic. Solve the numerical of the topics.
BIO	Principles of Inheritance and Variations- Heredity and Variation, Mendel laws of Inheritance https://youtu.be/mD0Onu2ArGA	Define – Phenotype, Genotype, Dominant, Recessive, Law of Dominance, Law of Segregation and Law of Independent Assortment
POL. SC.	Ch - 1: Forms of Government [Sec - A] Ch - 1: Indian constitution [Sec - B] www.youtube.com SOL Updates	Ch - 1 : meaning and features of three forms of govt , Comparative between totalitarian and authoritarian in a form of table in a sheet. Ch - 1 : [sec b] : According to the syllabus [Make a table neatly chapter wise in a ruled sheet.]
GEOG	Locational Setting Of India https://www.youtube.com/watch?v=2AXjSJ3-vE4	Learn- Extent of India, Its position with reference to latitude and longitude, length of coastline and frontiers with neighbouring countries, the locational advantages of India in the Indian Ocean
COMP	Ch - 1 : Topic: Propositional Logic:- https://youtu.be/40WIjcAsfTQ Topic : Basic postulates and theorems of Boolean Algebra:- https://youtu.be/E_V5sHfyxaU Topic : Boolean Expression:- https://youtu.be/smKUO7ZGxg4 Topic : Minterms and Maxterms:- https://youtu.be/ckqO4lXsnF4 Ch - 2 **:** Computer Hardware Topic : Realisation of Logic Gates with the help of universal gates:- https://youtu.be/W6yhLxDAwZ0	• Define (a) Conjunction (b) Disjunction (c) Converse (d) Inverse with suitable example. • Define the term Contingency, Contradiction and Tautology. • Take a truth table from book and write the SOP and POS expression of it. • Write the steps to convert a given expression into canonical SOP or Min Term expression • Write the steps to convert a given expression into canonical POS or Max Term expression • Write AND & NAND gate using NOR gate. • Write OR & NOR gate using NAND gate.
ECO	Topic : Demand – Meaning, Determinants of Demand and Law of Demand. https://youtu.be/VomWEGujAkI https://youtu.be/QvGLcCTXk9o	**Answer the following questions:** i) Meaning of Demand. ii) What are substitute goods and complementary goods? iii) Explain any five determinants of Demand. iv) Write the Law of Demand, its assumptions and explain the law with the help of imaginary demand schedule and diagram.

SUBJECT	TOPIC	INSTRUCTIONS
ACC	Partnership Fundamentals Basic concepts https://youtu.be/Cqh_KehepH8	Read the journal entries, format of P/l Appropriation account and partnership deed. Learn it. Write journal entries in your notebook.
COMM	Business environment: *Meaning, features and importance of business environment * Dimensions- micro and macro * SWOT analysis # Follow Council Syllabus https://youtu.be/ef-2Q3tjPww https://youtu.be/rMVer4o413w https://youtu.be/d1QUX2AFjz0 https://youtu.be/y9RDg_JMmPc https://youtu.be/uC9VJlWe4xo https://youtu.be/eqZOiyO8RLU https://youtu.be/JGUX1oEzj7A	1. Define the following- business environment, micro and macro environment of business, SWOT analysis 2. What are the features of business environment? 3. Explain the importance of business environment. 4. Explain the various dimension of business environment. 5. Elaborate the internal factors affecting business. 6. what are the external factors affecting business? 7. State the components of economic and political environment. 8. Write a short note on SWOT analysis.
F.A	Topic Design and Advertisement https://youtu.be/bGJX9qT9hmk	Commercial Perpur Off Design , Design N Add, Design Poster Or Pamphlet
CHEM	Ch-1. Solutions and Colligative Properties. Ch-2. Solid states ,Alkyl and Aryl Halides and Alcohols Links https://youtu.be/h_Q0jl2PNus https://www.youtube.com/playlist?list=PLF_7kfnwLFCG-Fm0odaUEQjDTEHdyP3PP https://youtu.be/ubcUA1ymjh0	Assignment as per given below

ASSIGNMENT

SET A

WORKSHEET:SOLUTIONS AND COLLIGATIVE PROPERTIES .

1. Find the molarity of all ions in a solution that contains 0.165 moles of aluminum chloride in 820. ml solution.

Answer: [Al 3+]= 0.201 M , (Cl-] = 0.603M.

2. Find the molarity of each ion present after mixing 27 ml of 0.25 M HNO3 with 36 ml of 0.42 M Ca(NO3)2 (Note: There is no reaction taking place.)

Answer: [H+]= 0.11 M, [NO3-]= 0.59M, [Ca2+]= 0.24 M .

3. Find the molarity of each ion present after mixing 35 ml of 0.42 M K2SO4 with 27 ml of 0.17M K3PO4.
Answer: [K +] = 0.71 M, [SO42-]= 0.24 M, [PO4 3-]= 0.074 M.

4. Calculate the concentration of each ion and the mass of any precipitate when a 0.300 mole of aluminum hydroxide is added to 50.0 ml of 2.5 M nitric acid solution (Assume that there is no volume change upon the addition of the aluminum hydroxide to the solution).
Hint: Write a balanced equation for the reaction taking place.
Answer: 20 g Al(OH)3 left over, [Al3+]=0.83 M, [NO3-]= 2.5M

5. A solution consists of 3.88 g benzene,C6H6 , and 2.45 g toluene ,C6H5CH3. The vapor pressure of pure benzene at 20. °C is 75 mm Hg and that of toluene at 20.0 °C is 22 mm Hg. Assume that Raoult's law holds for each component of the solution, calculate the mole fraction of benzene in the vapor. (molar mass of benzene= 78.0 g/mole and toluene = 92.0 g/mole.)
Answer= 0.87

6. The freezing point of a glucose solution (C6H12O6;molar mass= 180.0 g/mole) is - 10.3 °C . The density of the solution is 1.50 g/ml. What is the molarity of the glucose solution? (Kf for water is 1.86 °C.kg/mole)
Answer: 4.16 mole/L

7. What is the normal boiling point of a 2.70 M solution of KBr that has a density of 1.80 g/ml?(KB for H2O is 0.512 °C .kg/mole)
Answer=: 101.9 °C

8. 28.00 ml of 0.670 M potassium carbonate solution is mixed with 15.00 ml of 0.940 M cobalt(III) chloride a. Write a balanced equation for the reaction.
b. Write the total-ionic and net-ionic equations for the above reaction. Total ionic:
Net-ionic:
c. Give the name and mass of any precipitate(s)that may have formed.

Answer: 1.87 g of Co2(CO3)3 precipitate.

Calculate the molar concentration of each ion remaining in solution after the reaction is complete.
Answer:concentration of potassium ions= 0.874 M,

SET B

Concentration of cobalt (III) ions= 0.0372 M concentration of carbonate ions= 0 M concentration of chloride ions= 0.986 M
1. A solution that contains 12.6 g of a nonvolatile nondissociating solute in 400. g of benzene freezes at 3.6 °C . The normal freezing point of benzene is 5.5 °C. What is the molar mass of the solute? (KF for benzene= 4.96 °C .kg/mole)
Answer: 82 g/mole

2. Chloroform and methanol form an ideal solution. The solution boils at 22 °C and 0.255 atm . At 22 °C , the vapor pressure of pure methanol is 0.192 atm and the vapor pressure of pure chloroform is 0.311 atm. What is the mole fraction of chloroform in the solution?
Answer: 0.529

3. What is the normal boiling point of 1.21 M solution of CaI2 that has a density of 1.92 g/ml? (KB for H2O =0.512 °C .kg/mole)
Answer: 101.2 °C
4. Calculate the freezing point of a 36.0 % by mass Na3PO4 solution. (Kf for H2O = 1.86 °C .kg/mole)
Answer: -25.5 °C

5. 32.00 ml of 0.311 M aluminum nitrate is mixed with 64.00 ml of 0.177 M sodium carbonate and allowed to react.
a. Write a balanced equation for the reaction.
b. Write total-ionic and net-ionic equations for the above reaction.
Total-ionic:
Net-ionic:
c. Give the name and mass of any precipitate that may have formed.
Answer: 0.884 g of Al2(CO3)3 precipitate
d. Calculate the molar concentration of each ion remaining in solution after reaction is complete. Answer: Concentration of carbonate ions= 0 M

Concentration of aluminum ions = 0.0252 M Concentration of nitrate ions= 0.312 M Concentration of sodium ions = 0.236 M

SET C

1. What is the molarity of an aqueous solution of C6H12O6 that has a normal boiling point of 101.40 °C and density of 1.68 g/ml? KB for water is 0.512 °C .kg/mole. (C6H12O6 is a nonvolatile nondissociating solute.)
Answer: 3.07 mole/L

2. Calculate the normal freezing point of a 0.6837 M aqueous solution of C12H22O11 that has a density of 1.35 g/ml. (C12H22O11 is a nonvolatile nondissociating solute.) The molal freezing point depression constant of water is 1.86 °C .kg/mole.
Answer: Freezing point= -1.14 °C

3. Heptane, C7H16, and octane,C8H18, form an ideal solution. At 40. °C , the vapor pressure of pure heptane is 0.522 atm , and the vapor pressure of pure octane is 0.238 atm. A solution is made of 5.32 g heptane and 8.80 g octane. Calculate the mole fraction of octane in the vapor at the above temperature.
Answer: 0.398

4. What is the molar mass and molecular formula of a nondissociating compound whose empirical formula is C4H2N , if 3.84 g of the compound in 500. g benzene give a freezing point depression of 0.307 °C? (The molal freezing point depression constant for benzene is 5.12 °C .kg/mole.)
Answer: 128 g/mole; C8H4N2

5. Liquids A and B form an ideal solution. The vapor pressure of pure A is 0.700 atm at the normal boiling point of a solution prepared from 0.250 mole of B and 0.650 mole of A. What is the vapor pressure of pure B at this temperature?

6. A 0.900 L aqueous solution contains 30.0 g of a protein. The osmotic pressure of the solution is 12.7 torr at 25 °C. What is the molar mass of the protein?
Answer: 4.88 x 104 g/mole

7. Acetone and methanol form ideal solution. At 25 °C, the vapor pressures of pure acetone and pure methanol are 0.342 atm and 0.188 atm respectively. Calculate the mole fraction of methanol in a solution that boils at 25 °C and 0.248 atm.
Answer: X= 0.610
Answer: 1.77 atm

Rlakshmi

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