Excellence has No Limits

SACHDEVA GLOBAL SCHOOL

CLASS - XI	SUMMER HOLIDAY HOMEWORK

ENGLISH

Q1. Write a Book Review on "The Canterville Ghost" by Oscar Wilde, as per the format given below and submit in a file/folder.

S. No.	CONTENT
1	Summary and analysis
2	Character sketch- 5 Main characters
3	Evaluation of Plot and structure
4	Conclusion

COMPUTER SCIENCE

Complete the following projectand submit in a CD.

Project Work

Do the case study of the project of your given topic:
A Journey 'FROM ABACUS TO PENTIUM'
It should include the following:

- Updation taking place in:
  - ✓ Hardware
  - ✓ Software
  - ✓ Operating System
- Generations of computers
- People Behind for the updations

You can do any one of these:

- PPT
- WEBSITE
- MOVIE

CHEMISTRY

Complete the following assignment in chemistry notebook

Q.1 A 4 g sugar cube (sucrose: $C_{12}H_{22}O_{11}$) is dissolved in a 350 ml teacup filled with hot water. What is the molarity of the sugar solution?

Q.2 Calculate the mass of the substances are required to make the following solutions.

a) 2 L of 6 M HCl

b) 1.5 L of 2 M NaOH

c) 0.75 L of 0.25 M Na_2SO_4

Q.3 Calculate the molality when 75.0 grams of $MgCl_2$ is dissolved in 500.0 g of solvent.

Q.4 100.0 grams of sucrose ($C_{12}H_{22}O_{11}$, mol. wt. = 342.3 g/mol) is dissolved in 1.50 L of water. What is the molality?

Q.5 49.8 grams of KI is dissolved in 1.00 kg of solvent. What is the molality?

Q.6 Determine the molal concentration of a solution in which 320 grams of glucose $C_6H1_2O_6$ are dissolved in 4000 grams of water.

Q.7 How many grams $MgCl_2$ will be needed to prepare 3000 grams of a 0.8 molal solution?

Q.8 Find the mass percent of sodium acetate(CH_3COONa) in each of the following solutions:

a. 5.00g of sodium acetate in 25.0 g of water

b. 10.0g of sodium acetate in 25.0 g of water

Q.9 Calculate the mass, in grams, of NaCl present in each of the following solutions.

a. 11.5g of 6.25% NaCl solution

b. 6.25 g of 11.5% NaCl solution

c. 54.3 g of 0.91% NaCl solution

Q.10 For a 15.0% (by mass) NaCl solution, calculate:

a. the mass of NaCl in 150g of the solution

b. the amount of solution needed to obtain 35.0g NaCl

c. the mass of NaCl needed to make 1000. g of the solution

Q.11 Concentrated aqueous sulphuric acid is 98% H_2SO_4 by mass and has a density of 1.84g cm^{-3}.

(a) Calculate the molarity of the solution.

(b)What volume of this concentrated acid is required to make 5.0 L of 0.5 M H_2SO_4 solution.

Q.12 Calculate the mass of 60% H_2SO_4 required to decompose 50g of chalk(calcium carbonate).

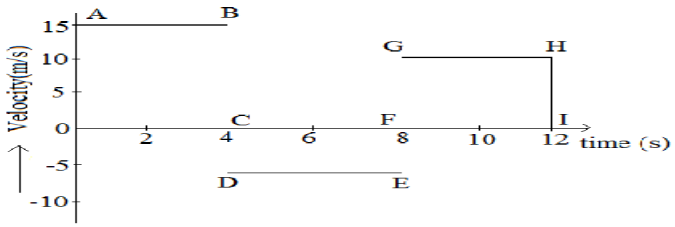
PHYSICS

Complete the following assignment in chemistry notebook

1. Two balls of different masses are thrown vertically upward with same initial speed.Which one will rise to a greater height?
2. Draw displacement time graph for uniformly accelerated motion. What is its shape?
3. Sameer went on his bike from Delhi to Gurgaon at a speed of 60km/hr and came back at a speed of 40km/hr. what is his average speed for entire journey.
4. A particle is moving along a straight line and its position is given by the relation

$$x = (t^3 - 6t^2 - 15t + 40)m$$

Find (a) The time at which velocity is zero.
(b) Position and displacement of the particle at that point.
(c) Acceleration for the particle at that line.
5. Velocity time graph of a moving particle is shown. Find the displacement (1) 0 – 4 s (2) 0 – 8 (3) 0- 12 s from the graph.



6. A particle is thrown upwards. It attains a height (h) after 5 seconds and again after 9s comes back. What is the speed of the particle at a height h?
7. Establish the relation $S_{nth} = u + a(2n - 1)$ where the letters have their usual meanings.

8. Under what condition the displacement and the distance of a moving object will have the same magnitude?

9. A balloon is ascending at the rate of 4.9m/s. A packet is dropped from the balloon when situated at a height of 245m. How long does it take the packet to reach the ground? What is its final velocity?

10. A car moving on a straight highway with speed of 126km/hr. is brought to stop within a distance of 200m. What is the retardation of the car (assumed uniform) and how long does it take for the car to stop?

11. Define (i) $v = u + at$ (ii) $v^2 - u^2 = 2as$ by calculus method

12. If the errors involved in the measurements of a side and mass of a cube are 3% and 4% respectively, what is the maximum permissible error in the density of the material ?

13. Show dimensionally that the frequency n of transverse waves in a string of length l and mass per unit length μ under a tension T is given by $n = \frac{K}{l}\sqrt{\frac{T}{m}}$

14.The velocity of sound waves 'v' through a medium may be assumed to depend on : (i)the density of the medium 'd' and (ii) the modulus of elasticity 'E'. Deduce by the method of dimensions the formula for the velocity of sound.

15. (a) What can be the maximum and minimum values of $(\vec{A} + \vec{B})$ and $(\vec{A} - \vec{B})$?

(b) If two vectors of equal magnitude added to each other gives magnitude of one of them. What is the angle between them?

MATHS

Complete the following assignment in maths note book

1. Write the proper subsets of set A = $\{ \varnothing, a \}$
2. If A = {3, 5, 7, 9, 11}, B = {7, 9, 11, 13}, C = {11, 13, 15} D = {15, 17}. Find (A $\cap$ B) $\cap$ (B $\cup$ C).and verify (A – B) $\cup$ (B – A) = (A $\cup$ B) – (A $\cap$B)
3. If U = {x : x $\in$ N and $2 \leq x \leq 12$ }, A = { x : x is even prime no} and B = { x : x is a factor of 24} then Verify: A' – B' = B – A

4. Let A and B be two sets such that n(A) = 20, n(A∪B) = 42 and n(A∩B)=4. Find

   1) n(B) 2) n(A – B) 3) n(B – A).
5. A and B are two sets such that n(A) = 3, n(B) = 6. Find the max and min values of n(A∪B)
6. If U= {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {2, 4, 6, 8}, B = {2, 3, 5, 7}, Verify De-Morgan's law: (A ∩ B)' = A' ∪ B'.
7. Let A, B and C be three sets. If A ∈ B and B ⊂ C, is it true that A ⊂ C, If not, give an

   example.
8. Write down the subsets of {2, {3}}. Also find the power set
9. A and B are two sets of 36 elements such that $n(A-B)=20+x,\ n(B-A)=3x$ *and* $n(A\cap B)'=x+1.$ Draw a Venn - diagram to illustrate this information. Find (i) the value of *x, (ii)* $n(A\cup B)$
10. A survey of 500 television viewers, produced the following information; 285 watch football, 195 watch hockey, 115 watch basketball, 45 watch football and basketball, 70 watch football and hockey, 50 watch hockey and basketball, 50 do not watch any three games. How many watch all the three games? How many watch exactly one of the three games?
11. A college awarded 38 medals in Football, 15 in Basketball and 20 in cricket. If these medals went to 58 men and only 3 men got medals in all the three sports, how many received medals in exactly two of the 3 sports?
12. Write the set {1/2 , 2/3, ¾, 4/5, 5/6, 6/7 } in the set-builder form
13. State which of the following sets are finite or infinite:
    (i) {x : x ∈ N and (x – 1) (x –2) = 0}
    (ii) {x : x ∈ N and x2 = 4}
    (iii) {x : x ∈ N and 2x –1 = 0}
    (iv) {x : x ∈ N and x is prime}
    (v) {x : x ∈ N and x is odd}
14. Find the pairs of equal sets, if any, give reasons:

A = {0}, B = {x : x > 15 and x < 5},
C = {x : x – 5 = 0 }, D = {x: x2 = 25},
E = {x : x is an integral positive root of the equation x2 – 2x –15 = 0}.

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PHYSICAL EDUCATION

Complete the following assignment in Physical Education practical file in the same order as listed below.

1. Explain in detail about any two Athletics events – Sprints and Jumps (The events must be other than from those administered under Physical Fitness Test).
2. Write benefits of Medicine ball, Thera Tube and Pilates.
3. Draw a neat diagram of Standard Track with all its specifications. Mention all the Track and Field Events.
4. Measure BMI of ten members from family or neighbourhood and show graphical representation of the data.

Happy Holidays!