CLASS - XI	SCIENCE

COMPUTER SCIENCE

Complete the following project and 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

ENGLISH

Roll No. 1-15

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	Preface
2	Particulars of the book
3	Chapterwise summary and analysis
4	Character sketch- 5 Main characters
5	Evaluation of Plot and structure
6	Suggestion
7	Conclusion

Roll No 15-30

Q2. Prepare an attractive and informative PowerPoint presentation with visuals on the novel "The Canterville Ghost" by Oscar Wilde. Include the following details.

S. No.	Points
1	About the Author- Life and work
2	Important Characters- Minimum 8
3	Analyses of Plot and theme
4	Summary
5	Main points
6	Conclusion

*** Minimum No. of Slides 25**

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 Explain how many grams 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

Prepare a project report (in A4 sheets) on any topic given below. The project report must include Introduction, Theory/ principle, procedure observations, calculations, result and conclusion.

• Various ways of harnessing geothermal energy such as energy from hot springs/ geothermal desalinization/geothermal heating .

.Controlling heating and cooling of a building using underground heat by vertical/horizontal loops/geothermal power/electricity generated from naturally occurring geological heat sources;

• Environmental implications of nanotechnology (nano-toxiology and nano-pollution).

• Devices to make breeze funneling towards your home;

• Hybrid solar lighting (solar illumination by routing daylight into the interior part of the building by reflecting a focused beam of sunlight on the end of optical fiber cables);

• Studies of variation in sunshine intensity at a given place for developing indigenous method of its usage etc;

• Projects for measuring availability of solar/wind energy in a given area;

• Model of wind turbine for domestic use with vertical/horizontal axis;

• Water sensitive urban design to mitigate water shortage;

• Use of tidal waves/ocean currents/salinity gradient for generating electricity;

• Wave energy from oscillating water conversion/tidal barrage generator etc

• Energy from biomass such as seaweeds, human/animal wastes, keeping in view environmental concerns;
• Improvised technologies for effective usage of bio-fuels

• Innovative designs of bio gas/bio mass plant

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$\cup$B) = 42 and n(A$\cap$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$\cup$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 $\cap$ B)' = A' $\cup$ B'.
7. Let A, B and C be three sets. If A $\in$ B and B $\subset$ C, is it true that A $\subset$ 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}.

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.

BIOLOGY

Prepare an informative ppt. On the five kingdom classification (as studied by you in class IX). The ppt should cover the following

- Systematic and Taxonomy
- Five kingdom classifications
- Characteristics of each kingdom/Division/Phyla/class(as applicable) with pictures of representative organisms.

Happy Holidays!