



**SLS DAV PUBLIC SCHOOL, MAUSMA VIHAR, DELHI-110051**

**Holidays Home Work**

**Session: 2015 - 16**

**Class -XII - SCIENCE**

## **BIOTECHNOLOGY**

\*Revise all techniques of chapter RDT with flowcharts and learn their applications.

\*Write brief notes on the following:

(1) Blue- white Selection methods of recombinants.

(2) Nanorobots

\*Activity: You want to produce a eukaryotic protein in large amounts in E.coli cells. Design a strategy for achieving this feat if the given gene for selection of recombinants is a heat resistance gene which allows the cells to grow upto 50 degree Centigrade. Draw a flow chart for the same.

\*Make a scrap file on “ Latest discoveries and inventions in the field of Biotechnology”.

## **PHYSICS**

- Prepare any 2 hands on activities based on any topic from physics and also prepare a report on it (word limit - 200)
  1. Light
  2. Electrostatics
  3. Magnetism
  4. Electromagnetism
  5. Electronics
  6. Communication
  
- Make a movie/presentation based on topic mention below  
(In a group of 5 students)
  1. Light (international year of light)
  2. Energy
  3. Electromagnetic pollution
  4. Nuclear radiation and its effects

5. Any other new topic.

- Take the photographs (any 2) from nature and surroundings based on concept of physics and write a brief note on it.
- Revise the syllabus of second credit test.

## **COMPUTER SCIENCE**

Q1. Write following C++ Programs in practical file.

- To find whether a given number is a palindrome or not.
- To find the nth power of a number m.
- To generate the series of prime numbers upto a given limit.
- To create a class stream with following data members:-
  - Streamed integer
  - Streamname string
  - Optional string
  - Duration integer
  - Member functions
  - Constructor to initialize the data member with following values .
  - Input function to accept the values of data members.
  - Display function to display all the values.
- To reverse the order of column elements in matrix.
- To sort an array of integers in ascending order.
- Define a class Customer with the following specifications. [4]
  - Private Members :
  - Customer\_no integer
  - Customer\_name char (20)
  - Qty integer
  - Price, TotalPrice, Discount, Netprice float
  - Member Functions:
  - Public members:
  - \* A constructor to assign initial values of Customer\_no as 111, Customer\_name as "Leena", Quantity as 0 and Price, Discount and Netprice as 0.
  - \* Input( ) – to read data members(Customer\_no, Customer\_name, Quantity and Price) call Calcdiscunt().
  - \* Calcdiscunt ( ) – To calculate Discount according to TotalPrice and NetPrice
    - TotalPrice = Price\*Qty
    - TotalPrice >=50000 – Discount 25% of TotalPrice
    - TotalPrice >=25000 and TotalPrice <50000 - Discount 15% of TotalPrice
    - TotalPrice <250000 - Discount 10% of TotalPrice
    - Netprice= TotalPrice-Discount
  - \*Show( ) – to display Customer details.

## **BIOLOGY**

1. Prepare a Project on any latest topics related to Biology it should include Case studies or pictures from news papers or Magazines or Reports from hospitals etc.
2. Project report should be preferably Hand written. it will be evaluated for 10 marks in Final Examinations and Viva in Mock practicals will be based on your Projects.
3. Complete the given Assignment in Biology note book.

## CHEMISTRY

1. Revise IUPAC Nomenclature for hydrocarbons, alkyl and aryl halides, alcohols, phenols, aldehydes, ketones and carboxylic acids.
2. Revise the topic “ Alcohols and Phenols “ and do questions from NCERT in class note book.
3. Do the assignment given on “ p-block elements and d-block elements “ in class note book.
4. Prepare an investigatory project on one of the following concepts:
  - a) Cation and anion analysis.
  - b) Titration

The above mentioned project will be evaluated for CBSE board examination.

## MATHEMATICS

- Revise formulas of trigonometry of class XI
- Recapitulate the concepts of Matrices.
- Revise the syllabus of credit 2

TOPICS :

1. Determinants
  2. Relation & Functions
  3. Inverse trigonometric Functions
- Do the assignments given in the school register.

**Q1. If x , y , z are 10 th , 13 th & 15 th terms of a G.P.**

$$\text{Find the value } \Delta = \begin{vmatrix} \log x & 10 & 1 \\ \log y & 13 & 1 \\ \log z & 15 & 1 \end{vmatrix}$$

$$\text{Q2. Evaluate } \begin{vmatrix} 0 & \sin \alpha & -\cos \alpha \\ -\sin \alpha & 0 & \sin \beta \\ \cos \alpha & -\sin \beta & 0 \end{vmatrix}$$

**Q3. If a,b,c are in A.P , Prove that**

$$\begin{vmatrix} x+1 & x+2 & x+a \\ x+2 & x+4 & x+b \\ x+3 & x+6 & x+c \end{vmatrix} = 0$$

Q4. Find one root of the equation  $\begin{vmatrix} 3x-8 & 3 & 3 \\ 3 & 3x-8 & 3 \\ 3 & 3 & 3x-8 \end{vmatrix} = 0$

Q5. Show that  $\begin{vmatrix} a^2+2a & 2a+1 & 1 \\ 2a+1 & a+2 & 1 \\ 3 & 3 & 1 \end{vmatrix} = (a-1)^3$

Q6. If a,b,c are in A.P, then find the value of

$$\begin{vmatrix} 2y+4 & 5y+7 & 8y+a \\ 3y+5 & 6y+8 & 9y+b \\ 4y+6 & 7y+9 & 10y+c \end{vmatrix}$$

Q7. If a,b,c are positive and unequal, show that the value of determinant  $\begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$

is negative.

Q8. Show that  $\begin{vmatrix} a & b & ax+by \\ b & c & bx+cy \\ ax+by & bx+cy & 0 \end{vmatrix} = (b^2-ac)(ax^2+2bxy+cy^2)$

• **PROJECT WORK :-**

Make a power point presentation on a Mathematics topic for project “DISCOVERY LEARNING”. Keep the following Points in mind while doing it .

1. Ppt. must be subject based ( topic of XI , XII ) or any Mathematics topic
2. “DISCOVERY LEARNING “ is an initiative to discuss innovations in Mathematics / too take care of conceptual knowledge through peer teaching . You may select only a part of the chapter where children make errors or find difficult to understand.
3. The presentation shall be judged by subject teachers at class level in phase I
4. In phase II it would be judged by Panel of experts on the basis of content, Presentation ,innovation, creativity , concept clarity.
5. Presentation must not exceed 4 – 5 min.
6. You may choose any other topic you wish to eg. Fibonacci series , Golden ratio etc

**ENGLISH CORE**

Q1. Read English newspaper daily . Select any one news from politics, social, sports each and read analytically.

Q2. Cut a variety of five classified and five commercial advertisements from the English newspaper and paste them in your note book.

Q3. Read all the chapters of both English Text Books and learn Q & Ans. Of the chapters covered in school.

Q4. Read 'The Invisible Man' by H. G. Wells –prescribed novel, completely and give your views on its theme and main characters in your notebook.

Q5. Write aware, spirited, opinionated and heartfelt debates on the following topics :

- . India is a three sport nation
- . Social media is the new chatterbox
- . food is the only thing that unifies cultures people of the world
- . one who understands art appreciates life more than others

### **FASHION STUDIES**

1. Complete the samples of neckline finishings.
2. Complete the assignment given in the class on History of Fashion.
3. Collect the pictures of Womenswear/Menswear/ Childrens wear and create a style file.
4. Visit the market and check various womenswear/menswear brands. What are the different styles and brands .Do you fit into same size of different brnds or is there a difference. Report the same on an A4 size sheet.
5. Visit the market and collect atleast 10 types of trimmings. Name them and prepare a trimming catalogue using creative ideas.

### **PSYCHOLOGY**

Q1. Surf an internet or go the library and obtain names and pictures of famous psychologists those have worked in various areas. Prepare a brief outline of their field of work and contribution to the society. Few names for your reference are:

- 1) Sigmund Freud
- 2) Ivan Pavlov
- 3) John Watson
- 4) Alfred Binet
- 5) Abraham Maslow
- 6) Carl Roger or any other renowned psychologist

Q2. Psychology is related to various fields like political science, economics, medicine, mass communication etc which you had already done in chapter 1. Take out any 3 relevant articles from the newspaper related to any of the above mentioned fields and try to relate its content with the 3 pillars of psychology (Mental activities, experience and behavior).