

**MANAV STHALI SCHOOL**

NEW DELHI

HOLIDAY HOMEWORK : CLASS - XI

2009-2010

**ENGLISH**

- Q1 With increasing influx of people and addition of vehicles in the Capital ----- traffic snarls are a common feature on the roads. Observe jams at peak hours and suggest six to ten concrete steps to improve / ease off the situation. (In 150 words)
- Q2 Catamaran, yacht, canoe, ship, steamer, schooner are types of boats. Paste pictures of each and write a short paragraph to describe it.
- Q3 Surf the internet and write a short article on the mummies of Egypt. Paste pictures also of some of the important mummies.

**MATHEMATICS**

## Linear Inequalities

1. Draw a graphical solution of each of the following:

- $x > 0, x < 6, y > 0, y < 7.$
- $x > 0, y > 0, x < y, x + y > 6.$
- $x < 5, y < 3, x > y, x + 2y < 6.$
- $y > (-4), y < 4, x + 2y > 2, x - y > 6.$
- $x > 2, x < 8, y < x+3, 2x + y < 10, y > 4.$
- $3x + 2y < 24, x + 2y < 16, x + y < 10, x > 0, y > 0.$
- $y < 0, 3x - y > 0$
- $x > 0, x - y < 0$
- $x > 0, y < 5, x - y < 6$
- $x > 4, y > -3, x + y < 6$

2. Solve the following inequalities and represent the solution on the number line.

- $\frac{x+1}{-2} \leq \frac{2-x}{3}$
- $\frac{3x+2}{2} \geq 12-4x$
- $|x-1| > 5$
- $|1-x| \leq 9$
- $2(2x+3) - 10 < 6(x-2)$

3. A recharger manufacturing company produces rechargers and its cost function for a week is  $C(x) = 1/10(4270 + 23x)$  and its revenue function is  $R(x) = 3x$ , where  $x$  is no. of rechargers produced and sold per week. How many rechargers must be sold for a company to realize a profit?

**XI**

- To receive grade A in a subject one must obtain an average of 90 or higher marks in 5 exams. If student's marks in first four exams are 91, 88, 93, 95, find the minimum marks a student must obtain to get a grade A in the subject.
- Find the pairs of consecutive even numbers, both greater than 6, such that their sum is less than 30.

**Statistics**

- Calculate the mean deviation from mean for the following frequency distribution:

Variance(n)	: 8	10	15	20	25	32	35
Frequency(f)	: 3	2	4	7	4	3	7

- Calculate the Median and the mean deviation about median for the following data :

Class Interval	: 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency:	5	8	7	12	28	20	10	10

- Calculate the mean and the standard deviation for the following data :

Marks:	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of students	3	6	13	15	14	5	4

- The mean and variance of 8 observations are 9 and 9.25 resp. If 6 observations are 6, 7, 7, 10, 12, 13, find the remaining two observations.

- In the study of 79 diabetic patients, the following data is obtained. Find the variance and the standard deviation without finding the average (i.e. using deviation method).

Age at Detection	No. of cases
10-19	1
20-29	0
30-39	1
40-49	10
50-59	17
60-69	38
70-79	9
80-89	3

- Find the mean and standard deviation for the following data :

Age	25-30	30-35	35-40	40-45	45-50	50-55
No. of teachers	30	23	20	14	10	3

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12. Find the average earnings (using deviation method) and standard deviation of the group of 432 workers from the data given below:

Monthly Wages	No. of workers
80-100	8
100-120	30
120-140	20
140-160	40
160-180	90
180-200	70
200-220	68
220-240	36
240-260	27
260-280	21
280-300	12

### CHEMISTRY

- If 6.3g of  $\text{NaHCO}_3$  are added to 15.0gms of  $\text{CH}_3\text{COOH}$  solutions, the residue is found to weigh 18.0gms, What is the mass of  $\text{CO}_2$  released in the reaction. [2]
- Phosphorus and Chlorine form two compounds the first compound contains 22.54% by mass of Phosphorus and 77.46% by mass of chlorine. In the second compound the percentages are 14.88% for phosphorus and 85.12% for Chlorine. Show that these data are consistent with the law of multiple proportion. (Ans:- 3:5 )
- How many grams of  $\text{H}_2\text{S}$  are contained in 0.42 moles of  $\text{H}_2\text{S}$   
(Ans:-13.6 gms)
  - How many molecules of  $\text{H}_2\text{S}$  are contained in 0.40 moles of  $\text{H}_2\text{S}$ ?  
(Ans:- $2.4088 \times 10^{23}$  molecules)
  - How many atoms of H and S are contained in 0.40 moles of  $\text{H}_2\text{S}$ ?  
(Ans:- $4.8167 \times 10^{23}$  atoms of S)  
(Ans:- $2.4088 \times 10^{23}$  atoms of H)
- You are supplied with a gas containing 0.32 gms of oxygen. Calculate the number of moles and number of molecules present in it.  
(Ans:-0.01 mole ,  $6.022 \times 10^{21}$  molecules) [2]
- Calculate the volume occupied at S.T.P by [3]
  - 16.0gms of oxygen (Ans :-11.20 L)
  - 1.5 moles of oxygen (Ans :-33.60 L)
  - $6.022 \times 10^{23}$  molecules of  $\text{CO}_2$  (Ans:-22.4 L)
- Calculate the number of atoms of each type present in 3.42gms of cane sugar ( $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ ) [3]  
(Ans:- C =  $7.226 \times 10^{22}$  atoms , H =  $1,325 \times 10^{23}$  atoms ,  
O =  $6.624 \times 10^{22}$  atoms )

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7. What weight of Calcium contains the same number of atoms as are present in 3.2gms of Sulphur? (Ans:-4gms) [2]
8. A piece of copper weighs 0.635gms . How many atoms of copper does it have? (Cu = 63.5g ) (Ans:- $6.022 \times 10^{21}$  atoms) [2]
9. Calculate the percentage of Calcium & Nitrogen in  $\text{Ca}(\text{NO}_3)_2$ ? (Atomic Wt. - Ca = 40 , N = 14 ,O = 16) (Ans:-Ca = 24.39% , N = 17.07%) [2]
10. Using internet as the source of information, write a short note on following (any 2)
- a. Molecular Orbital Theory
  - b. Electrolysis
  - c. Manufacture of Ammonia
  - d. Drawback of Bohr's Atomic Theory [4]
- ( Note - To be submitted in ruled sheets )

### PHYSICS

- Q1 What is a coherent system of units?
- Q2 What are the advantages of S.I. units?
- Q3 Which of these is largest astronomical Unit, Light year or Parsec.
- Q4 Which unit can be used for measuring large masses?
- Q5 What is meant by 1 Torr.
- Q6 Briefly explain the measuring Process of any Physical quantity.
- Q7 State three important conservation laws used in classical physics.
- Q8 Name the basic forces in Nature. Give some examples of gravitational, electromagnetic and nuclear forces from daily life experiences.

### BIOTECHNOLOGY

**Answer the following questions:**

- Q1. What will happen if you cross a parrot with a lion?
- Q2. What do you call a 6-legged insect that can't speak?
- Q3. List few career options in BT in India and Abroad?
- Q4. How is agricultural BT useful to the farmers?
- Q5. Myth: Food product through BT are not tested for health and environmental safety?
- Q6. What is BT? How is it useful for the mankind?
- Q7. Define genetic Engg?
- Q8. Can you give an idea about Test Tube Forests?
- Q9. Why do we need A.C's in BT lab?
- Q10. Draw a chart / model on any topic of BT?

**BIOLOGY**

**SECTION A**

- Q1. a. Discuss Viruses with respect to their structure and nature of Genetic Material.  
 b. Name the four viral diseases.  
 c. Differentiate between a Virus and Viroid.
- Q2. Write a note on economic importance of various types of Algae.
- Q3. Describe the structure of a dicotyledonous and a monocotyledonous seed.
- Q4. Draw a well labelled diagram of a 'animal cell'.
- Q5. Mention the functions of following cell organelles:  
 a. Endoplasmic Reticulum  
 b. Goli Apparatus  
 c. Mitochondria  
 d. Nucleus  
 e. Plastids  
 f. Ribosomes  
 g. Centro some  
 h. Lysosome  
 i. Vacuoles

**Section B**

- Q1. Prepare a brief project Report on any one of the following topics in Biology.
1. Role of Biotechnology in the society
  2. Human Genome Project
  3. DNA Finger Printing
  4. Recombinant DNA Technology
  5. How has life originated?
  6. Explore the world of living things and trace the fascinating discoveries that explain the amazing diversity of life on the earth (with the help of internet)
  7. Stem Cells and their importance
- Q.2 Prepare a Herbarium consisting of 10 to 15 plants.
- a) Two ornamental plants
  - b) Two medicinal plants.
  - c) Two Weeds.
  - d) Two leguminous Plants.
  - e) Two cereal crops.
- and remaining five plants of your choice.

**ENGINEERING DRAWING**

1. Write 0-9 in capital
2. vertical letters

3. write A-Z in capital
- XI 4. vertical and slant 75° letters

**COMPUTERS SCIENCE / I.P / MULTIMEDIA/WEB TECHNOLOGY/COMPUTER APP IN  
FMM**

1. Make a project on :-
  - a) Basic Computer architecture & Hardware devices
  - b) Network Security
  - c) Open Source Software
  - d) Make a report on free application softwares available on internet(F.M.M)

**BUSINESS STUDIES**

Prepare scrapbook on 5 national and 5 international enterprise following aspects should be covered.

1. Profile of the company including name of the company, name of chairperson, various product manufactured or product line, role in the society logo of the company, innovations & achievements.
2. Operations of these companies in other countries and home countries.
3. Conclusions - stating the future prospects of the chosen company in India.

**ECONOMICS**

1. Make a project file on India's General Elections with the help of statistical tools -
  - j 'Collection & Organisation of Data.
  - j 'Graphical & Pictorial Presentation of Organsied data.
  - j 'Result Analysis
  - j 'Interpretation.

**ACCOUNTS**

1. **Collect the specimen copies of the following documents:**
  - a) Account opening form
  - b) Withdrawal / deposit form
  - c) Cheque
  - d) Debit voucher
  - e) Credit voucher
  - f) Cash memo
  - g) Receipt
  - h) Bill receivable / payable
  - i) Share certificate
  - j) Letter of credit
2. **Take the statutory report of a public ltd. Co. and paste its:**
  - a) Trading account
  - b) Profit and loss account

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- c) Balance sheet
  - d) Auditor's report

### **INTRODUCTION TO FINANCIAL MARKET - PART I**

1. Make a project file which should include the following details :-
  - (i) Take the shares of any 5 companies and record the changes in share price for about 2 months ( May - June) and on that basis evaluate your result.
2. Everyday :- Watch (NBC TV18; NDTV Profit for about 1 hour and record all market related terms : as well as various markets in which the company can deal.

### **ACCOUNTING FOR BUSINESS**

Q.1 Make a project file which should include the following document .

#### **I Banking Documents**

- a) Saving Account Form ( of SBI)
- b) Pay - in - slip (of SBI)
- c) Withdrawl slip
- d) Application form for demand draft ( of SBI)
- e) Photostat copy of cheque

#### **II Company's Financial statement**

- a) Income statement
- b) Balance sheet
- c) cash flow

### **ENTREPRENEURSHIP**

1. Prepare questionnaires for Market Survey Report. (Like choice of households in the toiletry - soap, toothpaste, shampoo etc.)
2. Drawing a profile of a successful entrepreneur - for Case Study.

or

Take the school itself for case study and analyze any two aspects of the school plant for chalking out a plan of action : infrastructure, academics, co-curricular activities etc.

or

A case study on a thriving fast food shop / restaurant in your locality. What makes it so popular ?

### **COMMERCIAL ART**

1. 50 sketches from life

2. Poster on environment
- XI** 3. Illustration- class room scene
4. Make a reference file

### **FASHION STUDIES**

Support your work with as many visuals as possible

- [a] Surf the internet, access explore & compile data related to following terminology
- [1] Fashion
  - [2] Trend, style, fashion forecasting
  - [3] Art, craft & design
  - [4] Classic
  - [5] Fad
  - [6] Fashion cycle
  - [7] Fashion innovators, fashion motivators, fashion followers, fashion vitins
  - [8] Fashion as a career
  - [9] Career opportunities in the fashion industry
  - [10] Institutes offering courses related to fashion
  - [11] Prêt-a-porter
  - [12] Haute-coutrue
- [b] Prepare a list of Indian & International designers-fashion, jewellery interior textile etc.  
Find out the details of any one of an Indian and International designer [of your choice]  
- comment on their signature style, too.
- [c] List down the names of various branded labels, along with their merchandize (products & services they provide) and their price range.