

**NORTH-EX PUBLIC SCHOOL, JAIN NAGAR**  
**SUMMER BREAK ASSIGNMENT, 2018-19**  
**CLASS- XII-A**

## **ENGLISH**

- ❖ You are Navneet, resident of 65, P.H. Road, Manglore. Recently, you bought a mobile phone from The Phone Point, 83, Mount Road, Manglore. The phone instrument developed a problem within a month of purchase. Write a letter to the dealer giving details of the nature of the problem and asking him to rectify the defect or replace the set.
- ❖ You are Rajan, the cultural Secretary of K.P International School, Delhi. You have been asked to inform the students of classes XI and XII about the English Day celebrations in your school. Draft a notice inviting student participation for the same. Invent all necessary details.
- ❖ You have been asked to participate in the debate competition on the topic, 'Machines have enslaved Man'. Write the debate in 200 words either for or against the motion on A-4 size sheet.
- ❖ Read the novel, 'The Invisible Man' chapter 1- chapter 10 and make a summary of each chapter in the notebook.

## **PHYSICS**

1. Derive an expression for torque experienced by dipole placed in uniform electric field. Hence define electric dipole moment.
  2. What should be the position of charge  $q = 5\mu\text{C}$  for it to be in equilibrium on the line joining two charges  $q_1 = -4\mu\text{C}$  and  $q_2 = 16\mu\text{C}$  separated by 9 cm. Will the position change for any other value of charge  $q$ ?
  3. Two point charges  $4e$  and  $e$  each, at a separation  $r$  in air, exert force of magnitude  $F$ . They are immersed in a medium of dielectric constant 16. What should be the separation between the charges so that the force between them remains unchanged?
  4. ABC is an equilateral triangle of side 10 cm. D is the midpoint of BC, charge  $100\mu\text{C}$ ,  $-100\mu\text{C}$  and  $75\mu\text{C}$  are placed at B, C and D respectively. What is the force experienced by a  $1\mu\text{C}$  positive charge placed at A?
  5. A point charge of  $2\mu\text{C}$  is kept fixed at the origin. Another point charge of  $4\mu\text{C}$  is brought from a far point to a distance of 50 cm from origin. Calculate the electrostatic potential energy of the two charge system. Another charge of  $11\mu\text{C}$  is brought to a point 100 cm from each of the two charges. What is the work done?
  6. Work on an investigatory project of your choice.
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## **CHEMISTRY**

1. Do exercise questions and examples of Ch-1,2,3 in Register.
2. Read Ch-5,6,14,15,16 and make notes of these chapters.
3. Write and learn all the reactions of CH-10, 11, 12, 13.

## **BIOLOGY**

- Q1. Expand MMC. Write a note on the process called megasporogenesis.
- Q2. Expand hCOG and hCL. What is their role during the pregnancy period?
- Q3. Expand ZIFT. Why in India most couple who are infertile adopt the child instead of going for artificial innovative technique?
- Q4. Differentiate between Primary sex organs and secondary sex organs.
- Q5. Mohan's wife is pregnant. One day, at night she feels mild pain in her stomach. Mohan rushes her to nearby maternity hospital where she gives birth to a baby. He is very happy about this news.

- According to your knowledge what would you call the mild pains that Mohan's wife experienced?
- What according to you must have induced the people ejection reflexes to Mohan's wife?
- What will you scientifically term, to a process of delivering the foetus?
- Do you recommend her to go for breast feeding to her baby instantly? Why?

Q6. Make a investigatory report on AIDS.

## MATHS

- Let  $A = \mathbb{R} - \{3\}$ ,  $B = \mathbb{R} - \{1\}$ , if  $f: A \rightarrow B$  be defined by  $f(x) = \frac{x-2}{x-3} \quad \forall x \in A$ , then show that  $f$  is bijective.
- Solve the equation :  $\cos(\tan^{-1}x) = \sin(\cot^{-1}\frac{3}{4})$ .
- Find a Matrix A satisfying the Matrix equation  

$$\begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix} A \begin{pmatrix} -3 & 2 \\ 5 & -3 \end{pmatrix} = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$
- If  $A+B+C = 0$ , then prove that  

$$\begin{pmatrix} 1 & \cos C & \cos B \\ \cos C & 1 & \cos A \\ \cos B & \cos A & 1 \end{pmatrix} = 0$$
- Find the value of  $\theta$  satisfying  

$$\begin{pmatrix} 1 & 1 \\ -4 & 3 \\ 7 & -7 \end{pmatrix} \begin{pmatrix} \sin 3\theta \\ \cos 2\theta \\ -2 \end{pmatrix} = 0$$

Note: Revise chapters 1,2,3 and 4 from NCERT TEXT BOOK and NCERT EXAMPLAR for periodic test 1.

## COMPUTER SCIENCE

- Solve Q1, 2 and 6 of last 5 years class XII board examinations Computer Science.
- Prepare a practical file of C++. Do the programs covered in the class in it.
- Revise Chapter – 1, 4, 5, 6 and 13 for the upcoming periodic test.

## PHYSICAL EDUCATION

- Learn and write all questions of :  
 Chapter 1: Planning in Sports  
 Chapter-2: Sports and Nutrition
- Read and Learn Chapter-3 and 4.