



# Delhi Public School Gwalior

(Under the aegis of DPS Society, New Delhi)

## Holiday Assignment

### Class - IX

### Session (2024-25)



## **Dear Parents**

**Greetings of the day!**

**Vacations are the best time to relax and enjoy. Summer vacations are the reason behind fun in the sun, beach and shadow of the umbrella, but it is also the time to keep some analogy of academics alive in the fun to chisel the inherent potential inside your child. My suggestion to you is to spend these holidays being sociable and be vibrant in undertaking your plans so that the vacation is made purposeful.**

**To begin with, enhance every precious moment prudently by motivating your child to read informative and enlightening books. Help them improve their speech by conversing with them on every possible occasion and strop their vocabulary by providing them with new words. Spend substantial time visiting your kith and kin and people in your vicinity. Hold parley with your child on daily happenings and crucial world events as this is the best time to update, put forth your thoughts, notions and ideas before your ward and ask for an opinion, be a constant supporter of tolerance and disseminate it amongst people, teach your child to help and let him/her realize the meaning of real happiness and harmony and certainly root out all possible ill feelings and factions. Try being friendly and benevolent to all, let your child play the part in family reunions which will strengthen your family bond. Look out for the ways to abrade the plodding routine and take up some supportive vigorous activities with your child like swimming, cycling, jogging, painting or any other activity that your child enjoys.**

**It's your time to make every single moment eventful and memorable for your child and fill them with loads of experiences, which he/she eagerly wants to share with his/her pals and Educators when returned to School.**

**I wish you a pleasant vacation!**

**Regards**

**Principal  
Delhi Public School Gwalior**

## **ADD ONS TO MAKE YOUR VACATION MEANINGFUL !!**

**Childhood is a crucial stage of development. Most of life's important lessons are learnt here! Let us join hands and make sincere efforts to augment and hone the learning process of the child through inculcation of self learning and keen observation.**

- \* Let us attempt to enable them by allowing them to assume responsibilities of the routine household and shopping chores. (e.g.: laying the table, serving the guests, making their beds, buying groceries from the nearby stores etc.)**
- \* Let us make them aware about their social responsibilities which will transform them into a responsible citizen of our society. (e.g.: keeping the surroundings clean, make use of public litter bins, switching off lights / fans / closing the taps properly etc.)**
- \* They should be taught how to connect with Almighty God through prayers and meditation. (e.g.: daily prayers, thought of the day, meditate to improve the concentration etc.)**
- \* Socialize and connect with people, neighbours and relatives. (e.g.: meeting & greeting neighbours, helping the elderly around, be friendly to the peers etc.)**

**We wish all the great for your summer holiday time. May all the pleasure in the world embrace you, let your fun endless with friends and family.**

**Note : Kindly do all the Holiday Assignments neatly and submit it latest by July 10, 2024.**

## **SUBJECT – ENGLISH**

1. Write a diary entry of your visit to the Waste to Wonder Park describing your experiences of the day.
2. You went on the school camping trip and was about to get lost accidentally. Write an imaginary story to your friend, Rahul living in Dehradun narrating the details of your escapade.
3. Read the novel “Wings of Fire” and write a book review on it.
4. Maintain a personal diary and write two new words everyday along with current affairs.
5. Revise all the chapters done in the class so far.

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## **SUBJECT – HINDI**

### **ग्रीष्मकालीन गृहकार्य**

- प्रश्न 1. रहीम/कबीर का जीवन परिचय देते हुए उनका चित्र चिपकाइए तथा कोई पाँच दोहे, चौपाई व पद लिखिए।
- प्रश्न 2. 'मेहनत की कमाई' शीर्षक पर लघुकथा लिखिए तथा उससे मिलने वाली शिक्षा लिखिए।
- प्रश्न 3. शब्दालंकार के तीनों भेदों के दो-दो उदाहरण लिखिए।
- प्रश्न 4. 'दो बैलों की कथा' पाठ के माध्यम से जो ग्राम्य संस्कृति की झलक मिलती है, वह आपके आस-पास के वातावरण से कैसे भिन्न है। अपने शब्दों में लिखिए।

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## **SUBJECT – SANSKRIT**

### **ग्रीष्मकालीन गृहकार्यम्**

1. निम्नलिखित सर्वनाम-शब्दरूपाणि अपनी उत्तरपुस्तिका में स्पष्ट तथा सुन्दर हस्तलेखन में लिखें – तत् (तीनों लिंगों में), एतत् (तीनों लिंगों में), इदम् (तीनों लिंगों में)। अस्मद् तथा युष्मद्।
  2. धातुरूपाणि-(परस्मैपदी) : पठ्, गम्-गच्छ्, वद्, भू-भव्, क्रीड्, नी, दृश्, अस्, कृ, पा-पिब् धातुओं को – लट्लकार, लृट्लकार, लोट्लकार, लङ्लकार तथा विधिलिङ्लकार में लिखिए। (आत्मनेपदी) : लभ् तथा सेव् धातुओं को लट् तथा लृट्लकार में लिखिए।
- कंठस्थ/याद कर के संस्कृत की उत्तरपुस्तिका में सुंदर ढंग से लिखिए।

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## SUBJECT – MATHEMATICS

### General Instructions :

- Holiday Assignment consists of Multiple Choice questions, Assertion and Reasoning questions , Case based questions and solve the following questions.
- All the work to be done in A4 sized ruled sheets which are to be arranged in a stick file.
- All the best! Stay Home, Stay Safe!

### Multiple Choice Questions

- Q.1 The distance of the point P (4, 3) from the origin is  
(a) 4 (b) 3 (c) 5 (d) 7
- Q.2 The area of the triangle formed by the points A (2,0), B (6, 0) and C (4, 6) is  
(a) 24 sq. units (b) 12 sq. units (c) 10 sq. units (d) none of these
- Q.3  $(256)^{0.16} \times (256)^{0.09}$   
(a) 4 (b) 16 (c) 64 (d) 256.25
- Q.4 The square root of 64 divided by the cube root of 64 is  
(a) 64 (b) 2 (c)  $\frac{1}{2}$  (d)  $64^{2/3}$
- Q.5 If  $\frac{x}{x^{1.5}} = 8x^{-1}$  and  $x > 0$ , then  $x =$   
(a)  $\frac{\sqrt{2}}{4}$  (b)  $2\sqrt{2}$  (c) 4 (d) 64
- Q.6 If  $4^x - 4^{x-1} = 24$ , then  $(2x)^x$  equals  
(a)  $5\sqrt{5}$  (b)  $\sqrt{5}$  (c)  $25\sqrt{5}$  (d) 125
- Q.7 If  $x = \sqrt{5} + 2$ , then  $x - \frac{1}{x}$  equals  
(a)  $2\sqrt{5}$  (b) 4 (c) 2 (d)  $\sqrt{5}$
- Q.8 If  $x = \sqrt[3]{2 + \sqrt{3}}$ , then  $x^3 + \frac{1}{x^3} =$   
(a) 2 (b) 4 (c) 8 (d) 9
- Q.9 If  $x = 7 + 4\sqrt{3}$  and  $xy = 1$ , then  $\frac{1}{x^2} + \frac{1}{y^2} =$   
(a) 64 (b) 134 (c) 194 (d) 1/49
- Q.10 If  $\frac{\sqrt{3}-1}{\sqrt{3}+1} = a - b\sqrt{3}$ , then  
(a)  $a = 2, b = 1$  (b)  $a = 2, b = -1$  (c)  $a = 2, b = 1$  (d)  $a = b = 1$

### Assertion Reasoning Questions

**Direction of questions :** In the following questions, A statement of Assertion (A) is followed by a statement of Reason (R).

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (B) Both (A) and (R) true but (R) is NOT the correct explanation of (A).
- (C) (A) is true but (R) is false.
- (D) (A) is false and (R) is true.

Q.11 **Assertion (A) :** If  $(16)^{2x+3} = (64)^{x+3}$ , then  $4^{2x-2} = 256$

**Reason (R) :** If  $a \neq 0, \pm 1$ , then  $a^m = a^n \Rightarrow m = n$  and  $(a^m)^n = a^{mn}$

Q.12 **Assertion (A) :**  $\sqrt{2}$  is an irrational number.

**Reason (R) :** The decimal expansion of  $\sqrt{2}$  is non-terminating non-recurring.

Q.13 **Assertion (A) :** The perpendicular distance of the point (3, -7) from  $x$ -axis is 3.

**Reason (R) :** The perpendicular distance of the point (x, y) from  $x$ -axis is  $|y|$ .

Q.14 **Assertion (A) :**  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}} = 3$ .

**Reason (R) :**  $\sqrt{x + \sqrt{x + \sqrt{x + \dots}}} = x, x > 0$ .

Q.15 **Assertion (A) :** 0.7 and 0.00323232 ..... are rational numbers.

**Reason (R) :** If the decimal expansion of a real number is either terminating or non-terminating recurring it is a rational number.

Q.16 **Assertion (A) :** The point A (-4, 0) lies on  $x$ -axis.

**Reason (R) :** Ordinate of every point on  $x$ -axis is zero.

Q.17 **Assertion (A) :** If  $x$  and  $y$  are rational and irrational numbers respectively, then  $x + y$  is an irrational number.

**Reason (R) :** If  $x$  and  $y$  are two irrational numbers, then  $x + y$  is an irrational number.

Q.18 **Assertion (A) :** Points (3, -3) and (12, -4) lie in the same quadrant.

**Reason (R) :** Points (-1, -1) and (7, 7) lie on the bisectors of third and first quadrant angles.

Q.19 **Assertion (A) :**  $\left[ \left\{ \left( \frac{1}{7^2} \right)^{-2} \right\}^{-1/3} \right]^{1/4} = 7^{-1/3}$

**Reason (R) :**  $\left( (a^m)^n \right)^s = a^{mns}, a > 0$

Q.20 **Assertion (A)** : The perpendicular distance of the point P (4, -7) from  $x$ -axis is 4.

**Reason (R)** : The perpendicular distance of a point from  $x$ -axis is the absolute value of its  $y$ -coordinate.

**Solve the following :**

Q.21 Express the following with rational denominator:

$$\frac{30}{5\sqrt{3} - 3\sqrt{5}}$$

Q.22 Express the following with rational denominator:

$$\frac{b^2}{\sqrt{a^2 + b^2} + a}$$

Q.23 Simplify :  $\frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} + \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}}$

Q.24 If  $x = 3 + \sqrt{8}$ , find the value of  $x^2 + \frac{1}{x^2}$ .

Q.25 In the following determine rational numbers  $a$  and  $b$  :

$$\frac{4 + 3\sqrt{5}}{4 - 3\sqrt{5}} = a + b\sqrt{5}$$

Q.26 Simplify :  $\sqrt{3 + 2\sqrt{2}}$

Q.27 If  $x = 3 + 2\sqrt{2}$ , then find the value of  $\sqrt{x} - \frac{1}{\sqrt{x}}$ .

Q.28 Simplify :  $\frac{(25)^{3/2} \times (243)^{3/5}}{(16)^{5/4} \times (8)^{4/3}}$

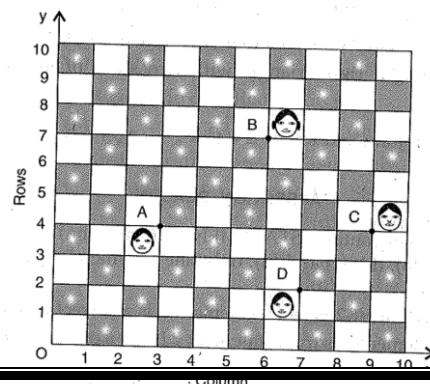
Q.29 Prove that :  $\frac{2^{1/2} \times 3^{1/3} \times 4^{1/4}}{10^{-1/5} \times 5^{3/5}} \div \frac{3^{4/3} \times 5^{-7/5}}{4^{-3/5} \times 6} = 10$

Q.30 Find the values of  $x$  in each of the following:

$$2^{5x} \div 2^x = \sqrt[5]{2^{20}}$$

**Case Study Based Questions**

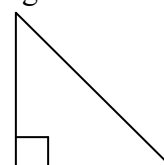
Q.31 Four persons John, Saurabh, Salim and Ratan are sitting in a courtyard at a points A, B, C and D respectively as shown in figure.



The courtyard has been divided into small squares by drawing equally spaced horizontal and vertical lines. Taking OX and OY as the coordinates axes answer the following questions:

- (i) The coordinates of point A are
- (ii) The coordinates of point B are  
**OR**  
The coordinates of point C are
- (iii) The coordinates of point D are

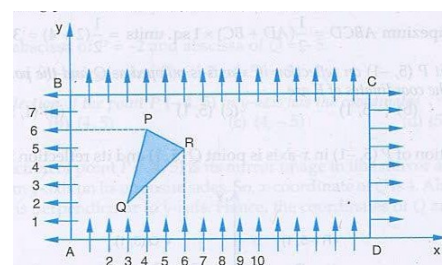
Q.32 Aarushi and Avni are playing with match-sticks by making different geometrical and other figures. Avni kept on match-stick horizontally and then two match-sticks vertically as shown in figure and then asks Aarushi to join the open ends of horizontally and vertically placed strings by a thread. Avni's elder sister Mira comes and ask them to find the length of the thread if each matchstick is of unit length.



Aarushi replies that the length of the thread can be found by using Pythagoras Theorem and it is equal to  $\sqrt{1^2 + 2^2} = \sqrt{4+1} = \sqrt{5}$  unit using your knowledge about numbers, answer the following questions.

- (i)  $\sqrt{5}$  is
- (ii) The decimal representation of an irrational number is  
**OR**  
The decimal representation of a rational number cannot be
- (iii) The sum of any two irrational numbers is

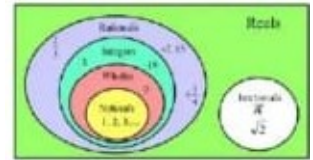
Q.33 Class IX students of a school in Moti Nagar, Delhi have been allotted a rectangular plot of land, adjacent to their school, for gardening activity. Saplings of Gulmohar are planted on the boundary at a distance of 1 m from each other. There is a triangular grassy lawn in the plot as shown in figure. The students are to sow seeds of flowering plants on the remaining area of the plot. Considering A as origin, AD along x-axis and AB along y-axis, answer the following questions.



- (i) The coordinates of A are
- (ii) The coordinates of P are  
**OR**  
The coordinates of R are
- (iii) The coordinates of D are



Q.34 Real numbers are numbers which include both rational and irrational numbers. Rational numbers are the numbers which can be expressed in the form of  $\frac{p}{q}$  where  $p$  and  $q$  are integers and  $q$  not equal to zero.



Irrational numbers are numbers which cannot be expressed as a ratio of two integers.

- (i) Every rational number is \_\_\_\_\_
  - (ii) The product of two irrational numbers is \_\_\_\_\_
- OR**
- The product of a rational and an irrational number is \_\_\_\_\_
- (iii) The sum of a rational and an irrational numbers is \_\_\_\_\_

Q.35 Two class mates Salma and Anil simplified two different expressions during the revision hour and explained to each other their simplifications.

Salma explains the simplification of  $\frac{\sqrt{2}}{\sqrt{5} + \sqrt{3}}$  by rationalising the denominator and Anil explains the simplification of  $(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$  by using an identity. Answer the following questions:

- (i) What is the conjugate of  $\sqrt{5} + \sqrt{3}$ ?
- (ii) By rationalising the denominator, Salma will get the answer as :  
**OR**  
Which identity did Anil use to evaluate  $(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$ ?
- (iii)  $(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3}) =$

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## **SUBJECT – SCIENCE**

### **General Instructions**

1. Do all the questions (Physics, Chemistry & Biology) in one notebook.
2. Write answers in a proper sequence.
3. Do neat & clean work.
4. Draw diagrams where ever required.

### **Section-A (Physics)**

#### **Objective Type Questions**

- Q.1 A physical quantity which has both magnitude and direction is called.  
(a) scalar quantity (b) vector quantity  
(c) neither (a) nor (b) (d) either (a) or (b)
- Q.2 The slope of velocity-time graph gives  
(a) distance (b) speed (c) acceleration (d) displacement
- Q.3 If a body travels equal distances in equal intervals of time, then  
(a) the body is moving with uniform velocity.  
(b) the body is moving with uniform acceleration.  
(c) the body may be moving with uniform velocity.  
(d) the body is moving with uniform deceleration.
- Q.4 The area under a velocity-time graph gives.  
(a) distance (b) acceleration (c) speed (d) displacement
- Q.5 The position-time graph of a body is parabolic, then the body is  
(a) In non-uniform motion  
(b) In uniform acceleration  
(c) At rest with some initial distance covered  
(d) At rest with zero initial distance covered

#### **Descriptive Type Questions**

- Q.1 Define uniform and non-uniform motion. Write one example for each.
- Q.2 A bus travels a distance of 120 km with a speed of 40 km/h and returns with a speed at 30 km/h. Calculate the average speed for the entire journey.
- Q.3 A car moves with a speed of 30 km/h for half an hour 25 km/h for one hour and 40 km/h for two hours. Calculate the average speed of the car.
- Q.4 Differentiate between speed and velocity.
- Q.5 A bus accelerates uniformly from 54 km/h to 72 km/h in 10 sec. Calculate.  
(i) acceleration  
(ii) distance covered by the bus in meters.

## **Section-B (Chemistry)**

### **Objective Type Questions**

- Q.1 When water gets solidified into ice, the heat is :  
(a) Absorbed (b) Evolved  
(c) First absorbed then evolved (d) Initially evolved and then absorbed
- Q.2 Intermolecular forces of attraction are least effective in :  
(a) Solids (b) Liquids (c) Gases (d) Plasma
- Q.3 The state of matter which is found to be more stable at lower temperature :  
(a) Solids (b) Liquids (c) Gases (d) Plasma
- Q.4 Boiling process is a :  
(a) Surface phenomenon (b) Bulk phenomenon  
(c) Both surface and bulk phenomenon (d) Rare phenomenon
- Q.5 In which state of matter, process of diffusion is fastest :  
(a) Solids (b) Liquids (c) Gases (d) Semi solids

### **Descriptive Questions**

- Q.1 What is BEC? How is it formed?
- Q.2 Show by an activity the particulate nature of matter?
- Q.3 Define the following terms:  
A. Fusion.  
B. Boiling  
C. Solidification  
D. Melting point  
E. Boiling point
- Q.4 Give reasons :  
A. Steam produces more severe burns than boiling water  
B. Carbon dioxide is called a gas.
- Q.5 Show by an activity that the gases are highly compressible as compared to solids and liquids.

## **Section – C (Biology)**

### **Objective Type Questions**

- Q.1 Plasmolysis in a plant cell is defined as  
(a) break down (lysis) of plasma membrane in hypotonic medium  
(b) shrinkage of cytoplasm in hypertonic medium  
(c) shrinkage of nucleoplasm  
(d) none of them
- Q.2 Which of the following are covered by a single membrane?  
(a) Mitochondria (b) Vacuole (c) Ribosome (d) Plastid
- Q.3 A cell will swell up if

- (a) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium
- (b) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell
- (c) The concentration of water molecules is same in the cell and in the surrounding medium
- (d) Concentration of water molecules does not matter

Q.4 Chromosomes are made up of  
(a) DNA (b) Protein (c) DNA and protein (d) RNA

Q.5 Cell wall of which one of these is not made up of cellulose?  
(a) Bacteria (b) Hydrilla (c) Mango tree (d) Cactus.

### **Descriptive Questions**

Q.1 Draw a plant cell and label the parts which  
(a) determines the function and development of the cell  
(b) packages materials coming from the endoplasmic reticulum  
(c) provides resistance to microbes to withstand hypotonic external media without bursting  
(d) is site for many biochemical reactions necessary to sustain life.  
(e) is a fluid contained inside the nucleus.

Q.2 How is a bacterial cell different from an onion peel cell?

Q.3 In brief state what happens when  
(a) The Plasma-membrane of a cell breaks down?  
(b) Leaves of a plant are boiled in water first and then a drop of sugar syrup is put on it?

Q.4 What is membrane biogenesis? Which cell organelle is responsible for this?

Q.5 Write any three differences between cell wall and plasma membrane.

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## **SUBJECT – SOCIAL SCIENCE**

### **Instructions -**

1. **The project should be submitted handmade only.**
2. **It should be prepared/ made from eco-friendly products without incurring too much expenditure.**
3. **Refer CBSE website (syllabus- Social Science) for the layout of the project report.**
4. **For details please refer disaster management supplement book.**

### **TOPICS (Any-one)**

The 1997 Uphaar Cinema Fire in Delhi

**OR**

Bhopal Gas Tragedy

**OR**

Tsunami

**OR**

Landslides

**OR**

Earthquakes

### **GUIDELINES FOR SUBMITTING THE PROJECT -**

1. Use readily available material.
2. It should be hand written project using original ideas.
3. You can use newspaper clippings, maps, pictures, diagrams, flowcharts, etc.
4. Each illustration should be supported with a write up / relevant to the topic.
5. The cover page should be presented in bold letters with the topic name.

Follow the sequence of the pages as given below.

- a. Acknowledgement
- b. Index
- c. Define disaster and its types
- d. Causes of the disaster
- e. Extent of damage
- f. Factors responsible for this disaster
- g. Steps taken by the government to combat
- h. Precautions to be taken
- i. Legal support given to next kin of the victims
- j. Do's and don'ts
- k. Lesson learnt from the disaster

**(NOTE- Project can be presented through File /Folder/Scrapbook etc. as well!)**

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## **SUBJECT – BANKING & INSURANCE**

**Prepare a practical file on the following topics-**

1. Role of banking sector in the modern era and its importance.
2. Prepare a chart on the types of Banks in India and Explain each of them.
3. Prepare a report on various utility functions provided by different types of banks in India.

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## **SUJET : FRANÇAIS**

- Q1. Vous irez à l'Alliance française de Delhi et écrivez vos Experience avec le images en 100 mots.
- Q2. Décrivez une personne que vous aimez en décrivant : (nom, prénom, âge, profession, personnalité physique et psychologique, préférences)
- Q3. Écrivez un message pour votre ami(e) lui informant que vous ne pouvez pas venir à son anniversaire. Redigez un refus.
- Q4. Projet : Un magazine de voyager L'objectif du travail : Découvrir une ville française  
Démarche : Il faut d'abord choisir une ville de France comme Paris, Lyon, Nice, Marseille, Rouen etc....  
Il faut commencer à travailler sur le thème.  
Votre travail doit avoir un minimum de 8 et maximum de 10 pages (A4) dont chaque page doit avoir entre 80-100 mots.
- Il faut faire une bonne recherche.
  - Il faut illustrer votre travail avec des images, photos etc.
  - Il faut noter et citer toutes les sources (des informations / des images) dans la bibliographie
  - Il faut utiliser le dictionnaire pour le vocabulaire.
  - Il faut faire des phrases simples.
- En ce qui concerne le magazine : Il faut chercher ses monuments, sa mode, sa cuisine, ses spécialités etc....

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## **SUBJECT – ARTIFICIAL INTELLIGENCE**

1. Topic:**Artificial Intelligence**  
The topic must contain the following points:
  - a) Introduction to Artificial Intelligence
  - b) Types of Artificial Intelligence.
  - c) Purpose of Artificial Intelligence.
  - d) The uses of Artificial Intelligence
  - e) Advantage and disadvantage of Artificial Intelligence
  - f) Applications of Artificial Intelligence

**Make your project on A4 sheet paper. Add pictures to make it attractive or you can also draw pictures. On the first page write topic name, your name, class and section. From second page write information about the topic. Use at least 5 pages to complete the project. Don't write information on both side of the page.**

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## **SUBJECT – INFORMATION TECHNOLOGY**

Students have to go for field visit to any Bank/Hospital /Organization to enquire about IT applications and make your report based on following points:

- ◆ What purpose IT is being used?
- ◆ How IT is beneficial for their company/Bank/Hospitals?

**Submit your survey in form of a printed writer/word file.**

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