



MATER DEI SCHOOL
CLASS XII HOMEWORK

SUBJECT	HOMEWORK
English	<ol style="list-style-type: none"> 1. Cut and paste three newspaper articles and do note-making and abstracting for the same. 2. Computer Games and video games have become very popular with children today .As a result outdoor games seem to have no place in their lives anymore. You are Anita, write an article on the same .(150-200 words) 3. You are Renu, 21, Kastura Nagar ,Chennai-110042. An open and well maintained park meant for the children and residents of your area would soon be converted into a shopping complex. Write a letter to the Municipal Commissioner, Municipal Corporation, Chennai, requesting him for saving the park which is the only open space in your area. 4. Read the newspaper daily.
Physics	Make an Investigatory Project in Physics on a topic of your choice. Prepare a report of the project and also a working model if possible.
Mathematics	<p>General Instructions:</p> <ol style="list-style-type: none"> 1. Holiday homework to be done in separate register. 2. Questions to be done in same order as given. 3. Date of submission: 1st July 2019. <ol style="list-style-type: none"> 1. Let a relation R1 on the set R of real numbers be defined as $(a,b) R1$ iff $1+ab > 0$ for all $a,b \in R$. Show that R1 is reflexive and symmetric but not transitive. 2. Let S be the set of all points in a plane and R be a relation on S defined as $R = \{(P,Q) : \text{Distance between P and Q is less than 2 units}\}$

Show that R is reflexive and symmetric but not transitive.

3. Prove that the relation R on Z defined by $(a,b) \in R$ if and only if $a-b$ is divisible by 5 is an equivalence relation on Z.

4. Let R be a relation on the set A of ordered pairs of integers defined by $(x,y) R (u,v)$ if and only if $xv = yu$. Show that R is an equivalence relation.

5. Let N denote the set of all natural numbers and R be the relation on $N \times N$ defined by $(a,b) R (c,d)$ if $ad(b+c) = bc(a+d)$. Show that R is an equivalence relation.

6. Show that the function given by $f(x) = ax + b$, where $a, b \in \mathbb{R}$, $a \neq 0$ is a bijection.

7. Show that the function $f: \mathbb{R} \rightarrow \{x \in \mathbb{R} : -1 < x < 1\}$ defined by $f(x) = \frac{x}{1+|x|}$ is one-one onto function.

8. If $f: \mathbb{R} \rightarrow \mathbb{R}$ be the function defined by $f(x) = 4x^3 + 7$, show that f is a bijection.

9. Show that the function $f: \mathbb{R} - \{3\} \rightarrow \mathbb{R} - \{1\}$ given by $f(x) = \frac{x-2}{x-3}$ is a bijection. Hence find f^{-1} .

10. Consider $f: \mathbb{R}^+ \rightarrow [4, \infty)$ given by $f(x) = x^2 + 4$. Show that f is invertible with inverse f^{-1} of f given by $f^{-1}(y) = \sqrt{y-4}$, where \mathbb{R}^+ is the set of all non-negative real numbers.

11. If $f(x) = \frac{4x-3}{6x-4}$, $x \neq \frac{2}{3}$, show that $f \circ f(x) = x$ for all $x \neq \frac{2}{3}$. What is the inverse of f ?

12. Consider $f: \mathbb{R}^+ \rightarrow [-5, \infty)$ given by $f(x) = 9x^2 + 6x - 5$. Show that f is invertible with $f^{-1}(x) = \frac{\sqrt{x+6}-1}{3}$.

13. Let $f: \mathbb{N} \cup \{0\} \rightarrow \mathbb{N} \cup \{0\}$ be defined by $f(n) = \begin{cases} n+1 & \text{if } n \text{ is even} \\ n-1 & \text{if } n \text{ is odd} \end{cases}$. Show that f is invertible and $f = f^{-1}$.

14. Show that $f: \mathbb{R} - \{0\} \rightarrow \mathbb{R} - \{0\}$ given by $f(x) = \frac{3}{x}$ is invertible and it is inverse of itself.

15. Prove the following

(i) $\tan^{-1} 2 + \tan^{-1} 3 = \frac{3\pi}{4}$

$$(ii) \sin^{-1} \frac{8}{17} + \sin^{-1} \frac{3}{5} = \tan^{-1} \frac{77}{36}$$

$$(iii) \sin^{-1} \frac{4}{5} + \sin^{-1} \frac{5}{13} + \sin^{-1} \frac{16}{63} = \frac{\pi}{2}$$

$$(iv) 2 \tan^{-1} \frac{1}{5} + \sec^{-1} \frac{5\sqrt{2}}{7} + 2 \tan^{-1} \frac{1}{8} = \frac{\pi}{4}$$

$$(v) \cot^{-1} 7 + \cot^{-1} 8 + \cot^{-1} 18 = \cot^{-1} 3$$

$$(vi) \cos(\sin^{-1} \frac{3}{5} + \cot^{-1} \frac{3}{2}) = \frac{6}{5\sqrt{13}}$$

16. Evaluate :

$$(i) \tan\left(\frac{1}{2} \cos^{-1} \frac{\sqrt{5}}{3}\right)$$

$$(ii) \tan\left(\frac{1}{2} \sin^{-1} \frac{3}{4}\right)$$

$$(iii) \cos(2 \cos^{-1} x + \sin^{-1} x) \text{ at } x = \frac{1}{5}$$

17. Solve the following equations :

$$(i) \sin^{-1}(1-x) - 2 \sin^{-1} x = \frac{\pi}{2}$$

$$(ii) \tan^{-1} \left(\frac{2x}{1-x^2}\right) + \cot^{-1} \left(\frac{1-x^2}{2x}\right) = \frac{2\pi}{3}, x > 0$$

$$(iii) 2 \tan^{-1}(\sin x) = \tan^{-1}(2 \sec x), x \neq \frac{\pi}{2}$$

$$(iv) \cos(\tan^{-1} x) = \sin(\cot^{-1} \frac{3}{4})$$

$$(v) \sin^{-1} 6x + \sin^{-1} 6\sqrt{3}x = -\frac{\pi}{2}$$

18. Write each of the following in the simplest form:

$$(i) \tan^{-1}\{\sqrt{1+x^2} - x\}, x \in R$$

$$(ii) \tan^{-1}\left\{\frac{\sqrt{1+x^2}-1}{x}\right\}, x \neq 0$$

$$(iii) \tan^{-1} \frac{\cos x}{1-\sin x}, -\frac{\pi}{2} < x < \frac{\pi}{2}$$

19. Find a matrix A such that $2A-3B+5C = O$ where $B = \begin{bmatrix} -2 & 2 & 0 \\ 3 & 1 & 4 \end{bmatrix}$ and $C =$

$$\begin{bmatrix} 2 & 0 & -2 \\ 7 & 1 & 6 \end{bmatrix}.$$

20. Prove that the product of matrices $\begin{bmatrix} \cos^2 \theta & \cos \theta \sin \theta \\ \cos \theta \sin \theta & \sin^2 \theta \end{bmatrix}$ and

$$\begin{bmatrix} \cos^2 \beta & \cos \beta \sin \beta \\ \cos \beta \sin \beta & \sin^2 \beta \end{bmatrix}$$

is the null matrix, when θ and β differ by an odd multiple of $\frac{\pi}{2}$.

21. If $A = \begin{bmatrix} 0 & -\tan \frac{\alpha}{2} \\ \tan \frac{\alpha}{2} & 0 \end{bmatrix}$ and I is a identity matrix of order 2,

show that $(I+A)(I-A) = \begin{bmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$

22. If $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 & -10 \\ 1 & -2 & -5 \\ 9 & 22 & 15 \end{bmatrix}$, find A .

23. Using elementary transformation find the inverse of the following matrices

(i) $A = \begin{bmatrix} 3 & -1 & -2 \\ 2 & 0 & -1 \\ 3 & -5 & 0 \end{bmatrix}$

(ii) $A = \begin{bmatrix} 1 & 2 & -1 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$

(iii) $A = \begin{bmatrix} 1 & 2 & 0 \\ 2 & 3 & -1 \\ 1 & -1 & 3 \end{bmatrix}$

(iv) $A = \begin{bmatrix} -1 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$

24. If $\begin{vmatrix} \frac{a^2+b^2}{c} & c & c \\ a & \frac{b^2+c^2}{a} & a \\ b & b & \frac{c^2+a^2}{b} \end{vmatrix} = kabc$, then find the value of k .

25. Find the value of the determinant $\begin{vmatrix} \sqrt{x} + \sqrt{y} & 2\sqrt{z} & \sqrt{z} \\ \sqrt{yz} + \sqrt{2x} & z & \sqrt{2z} \\ y + \sqrt{xz} & \sqrt{yz} & z \end{vmatrix}$

26. If $\begin{vmatrix} a & b-y & c-z \\ a-x & b & c-z \\ a-x & b-y & c \end{vmatrix} = 0$, prove that $\frac{a}{x} + \frac{b}{y} + \frac{c}{z} = 2$.

27. Find the value of the determinant $\begin{vmatrix} \sqrt{13} + \sqrt{3} & 2\sqrt{5} & \sqrt{5} \\ \sqrt{15} + \sqrt{26} & 5 & \sqrt{10} \\ 3 + \sqrt{65} & \sqrt{15} & 5 \end{vmatrix}$

28. Prove $\begin{vmatrix} a^2 + 1 & ab & ac \\ ab & b^2 + 1 & bc \\ ca & cb & c^2 + 1 \end{vmatrix} = 1 + a^2 + b^2 + c^2$

29. Using determinants solve the following system of linear equations:

(a) $x + 3y + 5z = 22$

$$5x - 3y + 2z = 5$$

$$9x + 8y - 3z = 16$$

(b) $x + y + z = 1$

$$x + z = -6$$

$$x - y - 2z = 3$$

30. A school wants to award its students for the values of Honesty, Regularity and Hard work with a total cash award of Rs. 6000. Three times the award money for hard work added to that given for honesty amounts to Rs. 11000. The award money given for honesty and hard work together is double the one given for regularity. Represent the above situation algebraically and find the award for each value, using matrix method.

31. Two schools A and B want to award their selected students on the values of sincerity, truthfulness and helpfulness. The school A wants to award Rs. x each Rs. y each and Rs. z each for the three respective values to 3, 2 and 1 students respectively with total award money of Rs. 1600. School B wants to spend Rs. 2300 to award its 4, 1 and 3 students on the respective values. If the total amount of award for one prize on each value is Rs. 900, using matrices, find the award money for each value.

32. Show that the matrix $A = \begin{bmatrix} 1 & 0 & -2 \\ -2 & -1 & 2 \\ 3 & 4 & 1 \end{bmatrix}$ satisfies the equation, $A^3 - A^2 - 3A - I = O$. Hence, find A^{-1} .

33. Determine the product $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix} \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$ and use it to solve system of equations:

$$x - y + z = 4, \quad x - 2y - 2z = 9, \quad 2x + y + 3z = 1.$$

34. Find A^{-1} , where $A = \begin{bmatrix} 1 & 2 & -3 \\ 2 & 3 & 2 \\ 3 & -3 & -4 \end{bmatrix}$. Hence solve the system of equations :

$$x + 2y - 3z = -4, 2x + 3y + 2z = 2, 3x - 3y - 4z = 11.$$

35. In the following, determine the value(s) of constant(s) involved in the definition so that the given function is continuous:

$$(i) f(x) = \begin{cases} \frac{\sin 2x}{5x} & \text{if } x \neq 0 \\ 3k & \text{if } x = 0 \end{cases}$$

$$(ii) f(x) = \begin{cases} 2 & \text{if } x \leq 3 \\ ax + b & \text{if } 3 < x < 5 \\ 9 & \text{if } x \geq 5 \end{cases}$$

$$(iii) f(x) = \begin{cases} \frac{\sqrt{1+px} - \sqrt{1-px}}{x} & \text{if } -1 \leq x \leq 0 \\ \frac{2x+1}{x-2} & \text{if } 0 < x \leq 1 \end{cases}$$

$$(iv) f(x) = \begin{cases} 4 & \text{if } x \leq -1 \\ ax^2 + b & \text{if } -1 < x < 0 \\ \cos x & \text{if } x \geq 0 \end{cases}$$

$$(v) f(x) = \begin{cases} \frac{k \cos x}{\pi - 2x}, & x < \frac{\pi}{2} \\ 3 & x = \frac{\pi}{2} \\ \frac{3 \tan 2x}{2x - \pi} & x > \frac{\pi}{2} \end{cases}$$

Chemistry

[A] Research on your respective Investigatory project and prepare the outline of the project. The outline of the project follows the order:

- Cover page
- Index / Contents
- Aim
- Certificate
- Acknowledgement
- Materials/ chemicals required
- Theory / Principle
- Procedure
- Observations
- Calculations (if any)

- Result
- Inference
- Bibliography

[B] Solve and complete the assignment given below on A4 sheets or assignment sheets. Please refrain yourself from doing them in registers or notebooks.

ASSIGNMENT: CHAPTER – 10 HALOALKANES & HALOARENES

1. Arrange the following in increasing order of boiling points:
 - a) Bromomethane, bromoform, chloromethane, dibromomethane
 - b) Propane, 1-chloropropane, isopropyl chloride, 1-chlorobutane
2. Complete the following reactions:
 - a) $\text{CH}_3\text{CH}_2\text{C}\equiv\text{CH} + \text{HCl} \longrightarrow$
 - b) $\text{CH}_3\text{CH}_2\text{C}(\text{CH}_3)=\text{CH}_2 + \text{HBr} \xrightarrow{\text{peroxide}}$
 - c) $\text{CH}_3\text{CH}_2\text{Cl} + \text{NaCN} \longrightarrow$
 - d) $(\text{CH}_3)_2\text{CHBr} + \text{Na} \xrightarrow{\text{dry ether}}$
3. What happens when : (give chemical reactions)
 - a) Cyclohexanol is treated with thionyl chloride
 - b) Ethyl bromide is refluxed with NaI in acetone
 - c) Ethyl bromide is treated with mercurous fluoride
 - d) p-hydroxybenzyl alcohol is treated with HCl
4. Write short notes on
 - a) Finkelstein reaction
 - b) Sandmeyer's reaction
 - c) Wurtz Fittig reaction
5. What is meant by $\text{S}_{\text{N}}1$ and $\text{S}_{\text{N}}2$ mechanism? Illustrate with the help of example and discuss the stereochemistry involved.
6. Out of $\text{C}_6\text{H}_5\text{CH}_2\text{Cl}$ and $\text{C}_6\text{H}_5\text{CHClC}_6\text{H}_5$, which is more easily hydrolyzed by aqueous NaOH?
7. Explain why:
 - a) vinyl chloride is unreactive in nucleophilic substitution reactions
 - b) tert-butyl chloride reacts with aqueous sodium hydroxide by $\text{S}_{\text{N}}1$ mechanism while n-butyl chloride reacts by $\text{S}_{\text{N}}2$ mechanism
 - c) neopentyl chloride $(\text{CH}_3)_3\text{CCH}_2\text{Cl}$ does not follow $\text{S}_{\text{N}}2$ mechanism
8. Convert:
 - a) Chlorobenzene to p-nitrophenol
 - b) Benzyl bromide to benzyl alcohol
 - c) 2,4,6-trinitrochlorobenzene to picric acid

ASSIGNMENT: CHAPTER – 11 ALCOHOLS, PHENOLS & ETHERS

1. Give the IUPAC name of the following:
 - a) $\text{CH}_2(\text{OH})(\text{CH}_3)\text{CH}_2\text{CH}_3$
 - b) $\text{CH}_2=\text{CHCH}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$
 - c) $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}(\text{OH})\text{CH}(\text{CH}_3)\text{CH}_2\text{OH}$
 - d) $\text{CH}_3\text{OCH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$
2. Convert:
 - a) Benzene to p-nitrophenol
 - b) Ethyl alcohol to t-butyl alcohol
 - c) Acetylene to iso-propyl alcohol
 - d) n-propyl alcohol to n-butyl alcohol
3. What happens when 1-butene reacts with diborane and the product is treated with alkaline H_2O_2 ?
4. How will you distinguish between:
 - a) 1-propanol and 2-propanol
 - b) Methanol and ethanol
 - c) Phenol and ethanol
5. Give reasons for the following:
 - a) Phenols are sparingly soluble in water.
 - b) Order of boiling points of isomeric pentyl alcohols is:
n-pentyl alcohol > iso-pentyl alcohol > neo-pentyl alcohol
 - c) Nitration of phenol takes place at ortho- and para- positions.
6. Explain the mechanism of the following;
 - a) Addition of Grignard's reagent to the carbonyl group of a compound forming an adduct followed by hydrolysis.
 - b) Acid catalyzed dehydration of an alcohol forming an alkene.
 - c) Acid catalyzed hydration of an alkene forming an alcohol.
7. Explain:
 - a) Kolbe's reaction
 - b) Reimer Tiemann reaction
 - c) Friedel Crafts acylation reaction
 - d) Williamsons reaction

ASSIGNMENT: CHAPTER – 12 ALDEHYDES, KETONES & CARBOXYLIC ACIDS

1. Alkenes and carbonyl compounds both contain a π bond but alkenes show electrophilic addition reaction whereas carbonyl compounds show nucleophilic addition reactions. Explain.
2. Bring out the following conversions:
 - a) Toluene to Benzaldehyde
 - b) Acetylene to acetaldehyde

- c) Formaldehyde to methyl alcohol
d) Propanoic acid to Acetic acid
3. How would you account for the following:
- Aldehydes are more reactive than ketones towards nucleophiles.
 - The boiling points of aldehydes and ketones are lower than those of corresponding acids.
 - Aldehydes and ketones undergo a number of addition reactions.
4. An alkene 'A' (Mol. Formula C_5H_{10}) on ozonolysis gives a mixture of two compounds 'B' and 'C'. Compound 'B' gives positive Fehling's test and also forms iodoform on treatment with I_2 and NaOH. Compound 'C' does not give Fehling's test but forms iodoform. Identify the compounds A, B and C. Write the reaction for ozonolysis and formation of iodoform from B and C.
5. Why is acetic acid stronger than phenol whereas formic acid is stronger than acetic acid?
6. Illustrate the following name reactions:
- Wolff- Kishner resction
 - Cannizzaro reaction
 - Aldol condensation
 - Clemmensen reduction
 - Stephen reaction
7. Explain the mechanism of nucleophilic addition to a carbonyl group and give one example of such addition reaction.
8. Write down the functional isomers of a carbonyl compound with molecular formula C_3H_6O . Which isomer will react faster with HCN and why? Will the reaction lead to the completion with the conversion of whole reactant into product at reaction conditions? If a strong acid is added to the reaction mixture, what will be the effect on concentration of product and why?

Biology

GENERAL INSTRUCTIONS

- Holiday work consist of an Assignment and an Investigatory Project.**
- Assignment is to be submitted on July 4 and Project on July 9.**
- Assignment is to be done on A-4 size sheets.**
- Answer the question according to the marks.**
- Ensure the neatness of your work.**
- Use only blue and black pen. For headings sketch pens can be used.**
- Colorful diagrams can be drawn but avoid using ribbons, glitter pens etc.**

ASSIGNMENT

- a) What kind of structure is formed at the end of microsporogenesis and

megasporogenesis?(1)

- b) Why are male testes located outside the abdominal cavity? (1)
- c) Why has the government imposed a statutory ban on amniocentesis? (1)
- d) Removal of Gonads cannot be a contraceptive option. Why? (1)
- e) Banana is a true fruit and also a parthenocarpic fruit. Justify. (1)
- f) Why we cannot use the term maize seeds for maize grains? (1)
- g) What is triple fusion? Where does it occur? (1)
- h) Define oestrus and menstrual cycle? (1)
- i) - Describe the technique that can help a healthy married women who is unable to produce viable ova but wants to bear a child. (1)
- a) Draw a labelled diagram of a human ovum. (2)
- b) How is polyspermy prevented in humans? (2)
- c) Why is follicular phase in the menstrual cycle also referred as proliferative phase? Explain. (3)
- d) Explain the events that occur in a graafian follicle at the time of ovulation and thereafter. (3)
- e) Draw a graafian follicle and label antrum and secondary oocyte. (3)
- j) Describe the embryonic development of a zygote upto its implantation in humans. (5)
- k) Mention the relationships between pituitary and ovarian hormones during a menstrual cycle? (5)
- Explain the menstrual phase in a human female. (5)
- l) Name two hormones that are constituents of contraceptive pills. Why do they have high and effective contraceptive value? Name a commonly prescribed non – steroidal oral pill. (5)
- m) How does pollination take place in Salvia. List any four adaptations required for such type of pollination.(5)
- n) Trace the events that would take place in flower from the time of falling of pollen grain on stigma upto completion of fertilization. (5)
- o) Trace the development of megasporocyte into mature ovules.(5)
- p) Describe the post-fertilization changes taking place in a flowering plants? (5)
- q) Explain the development of embryo in a dicotyledon plant with neatly labeled diagram. (5)

➤ **Investigatory project**

Research on your respective Investigatory project and prepare the outline of the project. The outline of the project follows the order:

- ✓ Abstract,
- ✓ Introduction,
- ✓ Objectives,
- ✓ Material Required (if any)
- ✓ Procedure (if any)

	<ul style="list-style-type: none"> ✓ Analysis of atleast one case study ✓ Observation ✓ Interpretation ✓ Recent researches done on that particular project ✓ Conclusion ✓ Bibliography. 																																		
Economics	<p>Make a project in the following mentioned topics:</p> <table border="1" data-bbox="529 562 1523 1276"> <tr> <td>• Micro and Small Scale Industries</td> <td>• Food Supply Channel in India</td> </tr> <tr> <td>• Contemporary Employment situation in India</td> <td>• Disinvestment policy of the government</td> </tr> <tr> <td>• Goods and Services Tax Act and its Impact on GDP</td> <td>• Health Expenditure (of any state)</td> </tr> <tr> <td>• Human Development Index</td> <td>• Inclusive Growth Strategy</td> </tr> <tr> <td>• Self-help group</td> <td>• Trends in Credit availability in India</td> </tr> <tr> <td>• Monetary policy committee and its functions</td> <td>• Role of RBI in Control of Credit</td> </tr> <tr> <td>• Government Budget & its Components</td> <td>• Trends in budgetary condition of India</td> </tr> <tr> <td>• Exchange Rate determination – Methods and Techniques</td> <td>• Currency War – reasons and repercussions</td> </tr> <tr> <td>• Livestock – Backbone of Rural India</td> <td>• Alternate fuel – types and importance</td> </tr> <tr> <td>• Sarwa Siksha Abhiyan – Cost Ratio Benefits</td> <td>• Golden Quadrilateral- Cost ratio benefit</td> </tr> <tr> <td>• Minimum Support Prices</td> <td>• Relation between Stock Price Index and Economic Health of Nation</td> </tr> <tr> <td>• Waste Management in India – Need of the hour</td> <td>• Minimum Wage Rate – approach and Application</td> </tr> <tr> <td>• Digital India- Step towards the future</td> <td>• Rain Water Harvesting – a solution to water crises</td> </tr> <tr> <td>• Vertical Farming – an alternate way</td> <td>• Silk Route- Revival of the past</td> </tr> <tr> <td>• Make in India – The way ahead</td> <td>• Bumper Production- Boon or Bane for the farmer</td> </tr> <tr> <td>• Rise of Concrete Jungle- Trend Analysis</td> <td>• Organic Farming – Back to the Nature</td> </tr> <tr> <td>• Any other newspaper article and its evaluation on basis of economic principles</td> <td>• Any other topic</td> </tr> </table>	• Micro and Small Scale Industries	• Food Supply Channel in India	• Contemporary Employment situation in India	• Disinvestment policy of the government	• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)	• Human Development Index	• Inclusive Growth Strategy	• Self-help group	• Trends in Credit availability in India	• Monetary policy committee and its functions	• Role of RBI in Control of Credit	• Government Budget & its Components	• Trends in budgetary condition of India	• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions	• Livestock – Backbone of Rural India	• Alternate fuel – types and importance	• Sarwa Siksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit	• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of Nation	• Waste Management in India – Need of the hour	• Minimum Wage Rate – approach and Application	• Digital India- Step towards the future	• Rain Water Harvesting – a solution to water crises	• Vertical Farming – an alternate way	• Silk Route- Revival of the past	• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer	• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature	• Any other newspaper article and its evaluation on basis of economic principles	• Any other topic
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Computer Science	<ol style="list-style-type: none"> 1. Complete the practical file questions. 2. Complete project file. 3. Learn chapter 14 – Networking. 4. Solve previous year board question of arrays, inheritance, constructors and destructors. 																																		
Sociology	<ol style="list-style-type: none"> 1) Prepare your own question bank for the first book. Organise the questions discussed, under two marks, four marks and six marks. Pl. practise writing the four and six marks answers. 2) Primary data for the project topic has to be collected over the holidays. (To follow instructions as explained in the class). 																																		

<p>Psychology</p>	<p>TASK: <u>Psychology Investigatory Project</u></p> <p>Instructions: The students are required to select a topic of their choice (which is related to Psychology and helps enhance their knowledge in a certain area) and develop a case profile. It would primarily make use of qualitative techniques such as observation, interview, survey etc. During the course of preparing the same, the students would gain a firsthand experience in the use of qualitative techniques. The main objective is to understand an individual in totality.</p> <p><u>Suggested format for developing a case profile:</u></p> <ol style="list-style-type: none"> 1) Introduction 2) Identification of data 3) Case history 4) Concluding comments <p>NOTE: The same has been discussed in class and students may refer to NCERT textbook page 199 for more clarity.</p>
<p>History</p>	<p>CBSE Project work.</p> <p>5 year sample papers to be practiced.</p> <p>Map skills.</p>
<p>Accountancy</p>	<ol style="list-style-type: none"> 1) COMPLETION OF ALL EXERCISE QUESTIONS OF T.S GREWAL IN HOMEWORKREGISTER OF ALL CHAPTERS COMPLETED BEFORE THE HOLIDAYS. 2) PROJECT WORK COMPLETION AS EXPLAINED AND ILLUSTRATED IN CLASS. <p>Presentation and submission of project report.</p> <p>At the end of the stipulated fieldwork, each student will prepare and submit his/her project report.</p> <p>Following essentials are required to be fulfilled for its preparation and submission.</p> <ol style="list-style-type: none"> 1. The total project will be in a file format, consisting of the recordings. 2. The project will be handwritten. 3. The project will be presented in a neat folder. 4. The project report will be developed in the following sequence- <ul style="list-style-type: none"> <input type="checkbox"/> Cover page should project the title, student information, school and year. <input type="checkbox"/> List of contents. <input type="checkbox"/> Introduction. <input type="checkbox"/> Topic with suitable heading. <input type="checkbox"/> Planning and activities done during the project, if any. <input type="checkbox"/> Observations and findings while conducting the project. <input type="checkbox"/> News paper clippings to reflect any information on the topic chosen <p>All documents, pamphlets, proforma of pay-in-slip, cheques etc collected</p>

	<input type="checkbox"/> Conclusions (summarized suggestions or findings, future scope of study). <input type="checkbox"/> Appendix. (The news papers read, T.V. channels viewed, places visited, WEBSITES and persons who have helped).
Business Studies	<ol style="list-style-type: none"> 1) COMPLETION OF ALL EXERCISE QUESTIONS OF NCERT TEXTBOOK IN HOMEWORK 2) REGISTER OF ALL THE CHAPTERS DONE IN CLASS BEFORE THE HOLIDAYS.
Political Science	<ol style="list-style-type: none"> 1) Prepare your own question bank for the first book. Organise the questions discussed, under one mark, two marks, four marks and six marks. Pl. practice writing the four and six marks answers. 2) Prepare a file having all the maps and cartoons of the first book. 3) Make a chart of India's relationship with the following countries, US, USSR, Russia, China, Pakistan, Bangladesh, Nepal, Sri Lanka, Bhutan, Maldives. The contemporary highlights of India's relationship with the above mentioned countries should be highlighted. 4) Watch the movies, The Innocent and Berlin Blues or any other movies on Cold War. 5) Primary data for the project topic has to be collected over the holidays. (To follow instructions as explained in the class).