# STEPHENS

## INTERNATIONAL PUBLIC SCHOOL



## Holidays' Homework

### Session – 2024-25

## Class : 12th

# Subject : English

**Task – 1**

**(A)** On the eve of World Environment Day, your school has decided to have a face painting competition. Draft a notice in not more than 50 words for your school notice board giving necessary information. You are Nimita/Naresh the Head Boy/ Girl J M K International School Jharkhand.

**(B)** Students leave their prestigious seats in IIT, IIM etc. and pursue high level courses abroad. Government spends a lot of money on these students and all this money goes waste when students opt for courses in foreign countries. Write an article on Brain Drain Among Youth in about 150 -200 words.

**Task – 2**

**(A)** You are Sweety/Suresh of L.M. Jain School, Ajmer. As Secretary of your School Co-curricular Activities Club, you visited a slum area in your city where the people suffered a great loss of life and property in a massive fire. The students of your school rendered their services and material help to the victims. Write a report in 100-120 words for your school magazine.

**(B)** Recently your school held a Seminar on Conservation of Water as a part of World Water Day celebrations. As the School Pupil Leader of Maryland School, Gurgaon, write a report in 100-120 words for a local daily. Sign as Pritham/Preeti.

**Task – 3**

**(A)** Write a letter to the Editor of The Hindu on the fear that is spreading among people due to their anxiety over the widespread terrorism in the world. Give suggestions to curb such anti-social activities. You are Vikram/Varsha of 325 Lane 5 Defence Colony Pathankot.

**(B)** You are Aman/Aditi studying in Bharat School, Lucknow. The road leading to your school is very congested and full of potholes. Students and parents are often caught in a traffic jam. In spite of several representations, the government has not done anything to improve the condition of the road. Write a letter to the Editor of The Times of India, drawing the attention of the government to this problem.

**Task – 4**

Read any one of the following books or any book of your choice and make a project. The project must be in the following order:

- General information about the book.
- Author's description.
- Main Character's description.
- Summary of the story.
- Moral / what you get from the book.

**Suggestive list:-**

1. Wings of Fire by APJ Abdul Kalam
2. Playing It My Way by Sachin Tendulkar
3. Here There and Everywhere by Sudha Murty
4. The Great Train Journey by Ruskin Bond
5. A Place Called Home by Preeti Shenoy

# Subject : Physics

Students are required to write down the Aim, Theory, Procedure and Precautions for the following practicals in their Physics Lab Files during the summer holidays. Do not write the observations or calculations.

1. To find the resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
2. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
3. To verify the laws of series combination of resistances using a metre bridge.
4. To verify the laws of parallel combination of resistances using a metre bridge.
5. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.
6. To determine the angle of minimum deviation for a given prism by plotting a graph between the angle of incidence and the angle of deviation.
7. To determine the refractive index of a glass slab using a travelling microscope.
8. To draw the I-V characteristics curves of a p-n junction in forward bias and reverse bias.

# Subject : Chemistry

I.   **Solve worksheet–2** in your fair notebook of chemistry. Worksheet–2 will be shared separately on campus care in first week of vacations.

II.  **Prepare a project file** of topics mentioned in C.B.S.E syllabus (Roll number wise) as allotted by the subject teacher. One student will only do one project.

III. **Revise chapter Solutions and Electrochemistry thoroughly.**

IV.  Self study of chapter Chemical Kinetics that will be completed in class after the summer vacation.

V.   **Buy evergreen practical file and note down the following practicals in it**. These practicals will be performed one by one after the vacations.

   1.  To prepare a sample of collidal Sol of starch.
   2.  To prepare a colloidal Sol of albumin from egg.
   3.  To prepare a sample of hydrated aluminum oxide solution.
   4.  To prepare a sample of hydrated ferric oxide.
   5.  To prepare crystals of potash alum.
   6.  To prepare a double salt of ferrous ammonium sulphate or Mohr's salt.
   7.  To prepare 250 ml of M/40 oxalic acid solution.
   8.  To determine the molarity of $KMnO_4$ solution by titrating it against a standard solution of oxalic acid.
   9.  A M/20 solution of Ferrous ammonium sulphate (Mohr's salt ) is provided. Using this solution find out the molarity, strength and percentage purity of the sample of $KMnO_4$, 2.0 gm of which has been dissolved in one litre of the solution of $KMnO_4$.
   10. To prepare about 5 g of acetanilide.
   11. To prepare 2-naphthol aniline dye or beta-naphthol aniline dye.
   12. To detect the given salt for acidic and basic radicals. (Ammonium chloride)
   13. To detect the given salt for acidic and basic radicals. (Lead nitrate)
   14. To detect the given salt for acidic and basic radicals. (Aluminum sulphate)
   15. To detect the given salt for acidic and basic radicals. (Calcium carbonate)

**From practical 12-15 (Salt analysis), you will write in those pages that contain three columns (Experiment, observation and inference)**

Feel free to ask your teacher during summer vacation if you find any doubt while writing but make sure, write in a correct way).

# Subject : Biology

## Section – A

**A.    Very short answer type questions:-**
1.    List three strategies that a bisexual chasmogamous flower canevolve to prevent self pollination.
2.    What is polyembryony?
3.    What is the role of cervix in human female reproductive system?
4.    STDs can be considered as self-invited diseases. Comment.
5.    Differentiate between a test cross and a back cross.

**B.    Short answer type questions:-**
1.    Why does the zygote begin to divide only after the division of primary endosperm cell?
2.    Corpus – Luteum in pregnancy has a long life. However if fertilization doesn't take place, it remains active only for 10 – 12 days. Explain.
3.    Briefly explain the IVF and ET. What are the conditions in which these methods are advised?

**C.    Long answer type questions:-**
1.    Discuss the mode of action and advantages/disadvantages of normal contraceptives.
2.    What is spermatogenesis? Give schematic representation of spermatogensis.
3.    Draw a longitudinal section of a post pollinated pistil showing entry of pollen tube into a mature embryo sac. Label it.

## Section– B

**List of practicals to be written on practical file:**
(i)    Prepare a temporary mount to observe pollen germination.
(ii)    Study the plant population density by quadrat method.
(iii)    Study the plant population frequency by quadrat method.
(iv)    Prepare a temporary mount of onion root tip to study mitosis.
(v)    Isolate DNA from available plant material such as spinach, green pea seeds, papaya etc.

# Subject : Mathematics

**A.** **Multiple choice questions:**

Q1. A relation R defined on N which of the following is the reflexive relation?
(a) $R = \{x, y\} : x > y : x, y \in N\}$
(b) $R = \{x, y\} : x + y = 10 : x, y \in N\}$
(c) $R = \{(x, y) : xy$ is the square no. $x, y \in N\}$
(d) $R = \{(x, y) : x + 4y = 10; x, y \in N\}$

Q2. If the function $f(x) = \begin{cases} 3x - 8 & x \le 5 \\ 2k & x > 5 \end{cases}$ if is continuous than the value of k is

(a) $\dfrac{2}{7}$　　　(b) $\dfrac{7}{2}$　　　(c) $\dfrac{3}{7}$　　　(d) $\dfrac{4}{7}$

Q3. The inverse of $\begin{bmatrix} -4 & 3 \\ 7 & -5 \end{bmatrix}$ is

(a) $\begin{bmatrix} -5 & 3 \\ 7 & -4 \end{bmatrix}$　　(b) $\begin{bmatrix} 5 & 3 \\ 7 & 4 \end{bmatrix}$　　(c) $\begin{bmatrix} -5 & 7 \\ 3 & -4 \end{bmatrix}$　　(d) $\begin{bmatrix} -5 & -3 \\ -7 & -4 \end{bmatrix}$

Q4. If $\begin{vmatrix} 5 & 3 & -1 \\ -7 & x & -3 \\ 9 & 6 & -2 \end{vmatrix} = 0$ then the value of $x$ is

(a) 3　　　　(b) 5　　　　(c) 7　　　　(d) 9

Q5. If order of matrix A is 2 × 3, of matrix B is 3 × 2 and of matrix C is 3 × 3, then which one of the following is not defined?
(a) C(A+ B′)　　(b) C(A + B)　　(c) BAC　　(d) CB + A′

Q6. If $A = \begin{bmatrix} 4 & 2 \\ -1 & 1 \end{bmatrix}$, then (A – 2I) (A – 3I) is equal to

(a) A　　　　(b) I　　　　(c) 5I　　　　(d) 0

Q7. If $A = \begin{bmatrix} \alpha & 2 \\ 2 & \alpha \end{bmatrix}$ and $\left| A^3 \right| = 27$, then the value of α is

(a) $\pm 1$　　　(b) $\pm 2$　　　(c) $\pm \sqrt{5}$　　　(d) $\pm \sqrt{7}$

Q8. If $y = \tan^{-1}(e^{2x})$ then $\dfrac{dy}{dx}$ is equal to

(a) $\dfrac{2e^{2x}}{1 + e^{4x}}$　　(b) $\dfrac{1}{1 + e^{4x}}$　　(c) $\dfrac{2}{e^{2x} + e^{-2x}}$ (d) $\dfrac{1}{e^{2x} - e^{-2x}}$

Q9. The number of equivalence relations in the set {1, 2, 3} containing (1, 2) and (2, 1) is
(a) 0　　　　(b) 1　　　　(c) 2　　　　(d) 3

Q10. The value of $\sin^{-1}\left( \cos \dfrac{13\pi}{5} \right)$ is

(a) $\dfrac{-3\pi}{5}$　　(b) $\dfrac{-\pi}{10}$　　(c) $\dfrac{3\pi}{5}$　　(d) $\dfrac{\pi}{10}$

Q11. If $y = e^{-x}$ then $\dfrac{d^2 y}{dx^2}$ is equal to

(a) $-y$        (b) $y$        (c) $x$        (d) $-x$

Q12. If $x = t^2 + 1$, $y = 2at$ then $\dfrac{d^2y}{dx^2}$ at $t = a$ is

(a) $\dfrac{-1}{a}$        (b) $\dfrac{-1}{2a^2}$        (c) $\dfrac{1}{2a^2}$        (d) $0$

**B.** **Short answer type questions:-**

Q13. Given $A = \begin{bmatrix} 2 & -3 \\ -4 & 7 \end{bmatrix}$ compute $A^{-1}$. Show that $2A^{-1} = 9I - A$.

Q14. If $x = a(2\theta - \sin 2\theta)$ and $y = a(1 - \cos 2\theta)$, find $\dfrac{dy}{dx}$ where $\theta = \dfrac{\pi}{3}$.

Q15. Express $A = \begin{bmatrix} 4 & -3 \\ 2 & -1 \end{bmatrix}$ as sum of symmetric and skew symmetric matrix.

Q16. Express $\tan^{-1}\left(\dfrac{\cos x}{1 - \sin x}\right)$ in the simplest form.

**C.** **Long answer type questions:-**

Q17. Show that function $f : (-\infty, 0) \to (-1, 0)$ defined by $f(x) = \dfrac{x}{1 + |x|}, x \in (-\infty, 0)$ is one-one
and onto.

Q18. Show that the R in the set $A = \{1, 2, 3, 4, 5, 6\}$ given by $R = \{(a, b) : |a - b| \text{ is divisible by 2}\}$ is an equivalence relation.

Q19. Solve the following system of equations by matrix method.
$$x - y + 2z = 7$$
$$2x - y + 3z = 12$$
$$3x + 2y - z = 5$$

Q20. If $A = \begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 3 \\ 1 & -2 & 1 \end{bmatrix}$, find $A^{-1}$. Hence solve the following system of equations

$$x + y + z = 6$$
$$y + 3y = 11$$
$$x - 2y + z = 0$$

**D.** **Lab Activities (to be done on lab manual)**

1. To verify that the relation R in the set of all lines in a plane, defined by $R = \{(l, m) : l \parallel m\}$ is an equivalence.
2. To demonstrate a function which is not one-one but is onto.
3. To demonstrate a function is one-one but not onto.
4. To draw the graph of $\sin^{-1} x$ using the graph of $\sin x$ and demonstrate the concept of mirror reflection (about the line $y = x$)
5. To sketch the graph of $a^x$ and $\log a^x$ mirror images of each other.
6. To find analytically the limit of a function $f(x)$ at $x = C$ and also to check continuity of the function at that point.

## Subject : Accountancy

1. Do illustration of the given topics.
   (i) Interest on Capital
   (ii) Interest on Drawings
   (iii) Interest on Loan
   (iv) Profit & loss Appropriation A /c
   (v) Past Adjustment
   (vi) Guarantee of Profit
2. Explain the methods of valuation of goodwill with the help of examples.
3. Write the journal entries of
   (i) Workman Compensation Reserve
   (ii) Investment fluctuation Reserve
4. Prepare Project Report:-
   One specialized project based on Co's financial statement analysis that cover any two of the following.
   (i) Comparative and common size financial statements
   (ii) Accounting Ratios
   (iii) Segment Reports
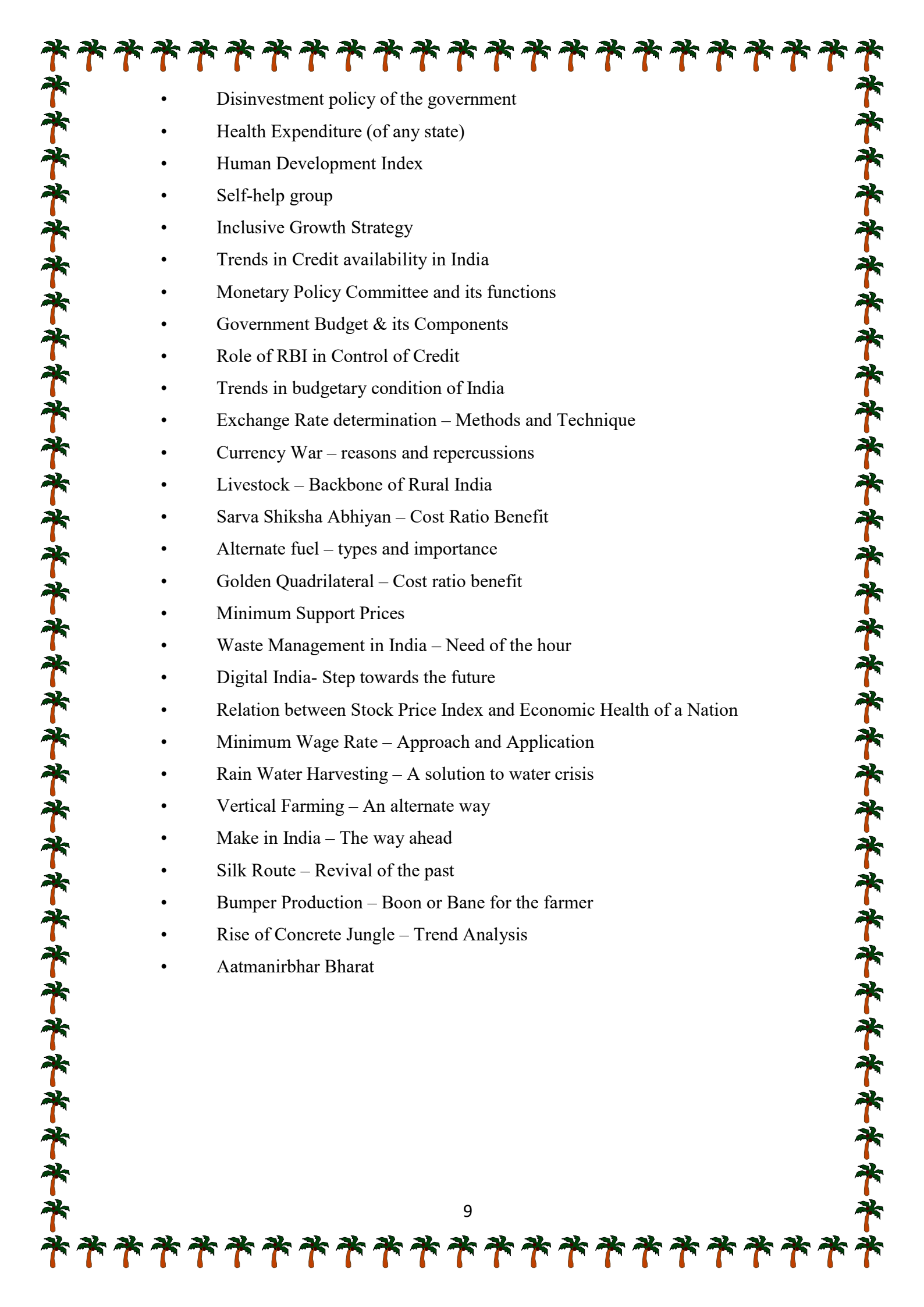   (iv) Cash flow statements

## Subject : Business Studies

- **Do Case Study based questions from chapters 2 & 4. (minimum 05)**
- **Prepare a project on Marketing.**

## Subject : Economics

**Answer the following questions:-**
1. **PREPARE DETAILED NOTES OF THE FOLLOWING CHAPTERS (TO BE DONE ON FAIR NOTEBOOK)**
   1. Money and Banking
   2. Govt. Budget
   3. Balance of Payments

2. **Project work (TO BE DONE IN A FILE)**
   **(Choose any one from the following topics)**
   - Micro and Small Scale Industries
   - Contemporary Employment situation in India
   - Goods and Services Tax Act and its Impact on GDP

- Disinvestment policy of the government
- Health Expenditure (of any state)
- Human Development Index
- Self-help group
- Inclusive Growth Strategy
- Trends in Credit availability in India
- Monetary Policy Committee and its functions
- Government Budget & its Components
- Role of RBI in Control of Credit
- Trends in budgetary condition of India
- Exchange Rate determination – Methods and Technique
- Currency War – reasons and repercussions
- Livestock – Backbone of Rural India
- Sarva Shiksha Abhiyan – Cost Ratio Benefit
- Alternate fuel – types and importance
- Golden Quadrilateral – Cost ratio benefit
- Minimum Support Prices
- Waste Management in India – Need of the hour
- Digital India- Step towards the future
- Relation between Stock Price Index and Economic Health of a Nation
- Minimum Wage Rate – Approach and Application
- Rain Water Harvesting – A solution to water crisis
- Vertical Farming – An alternate way
- Make in India – The way ahead
- Silk Route – Revival of the past
- Bumper Production – Boon or Bane for the farmer
- Rise of Concrete Jungle – Trend Analysis
- Aatmanirbhar Bharat

# Subject : Sociology

**Answer the following Questions**

Q1.  "The struggle for women's upliftment in the 19$^{th}$ and early 20$^{th}$ centuries was led by male reformers". Discuss the suitable examples.

Q2.  "Women are the basic unit of Society". What were the major women's issues taken up by various reformers in Indian history?

Q3.  "The structure of family can be studied both as a social institution in itself and also in its relationship to other social institutions of society. Elaborate.

Q4.  Critically examine the process of Sanskritization.

**Suggested topics for project work (pick anyone)**

1.  Changes in the rural and urban centers
2.  Green Revolution
3.  Sanskrization, modernization westernization
4.  Tribal societies
5.  Colonialisation
6.  The struggle for the Women's Equality and Rights
7.  The struggle of the differently abled
8.  Caste and the caste system

# Subject : Political Science

**A.    Project Work.**

**Some suggested topics are:**

■        The importance of elections in a democratic country especially in India.

■        Partition – Theory behind it and its legacy.

■        One Party Dominance – Congress to BJP.

■        Change in India's Foreign Policy.

■        India's relation with its neighbours – (Choose any one country)

■        Emergency – Reasons and Consequences

■        New centre of power - EU, ASEAN, (Choose any one and explain).

■        UN and its agencies.

■        Environment – Sustainable development – Need of the hour.

■        Globalisation – Economic, Political and Cultural Impact on Third World

■        Choose Any other topic based on the syllabus.

**General Instructions:**

1.        It should be a handwritten project on a A4 size sheet.

2.        Project should be summed up in 12-15 pages.

3.        It should be well researched and pictorial.

4.        Title/ Cover page, acknowledgement, list of contents, Bibliography, headings and sub-headings are a must.

**B.    Read the newspaper daily especially the editorial page to update yourself.**

**C.    Answer the following questions.**

1.        What are the major differences between ASEAN and European Union as an alternative centres of power?

2.        Explain Japan and South Korea as New centre of power.

3.        Analyse India's changing relationship with post-communist Russia.

4.        Critically evaluate the difficulties involved in implementing the suggested reforms to reconstruct the UN.

5.        Explain any four reasons as to why India should be given a permanent membership in the UN Security Council.

6.        Discuss the consequences of the partition.

7.        Explain the ideology of Congress party.

# Subject : History

**A.    Answer the following questions:-**
Q1.    Describe the distinctive features of domestic architecture of Mohenjodaro.
Q2.    Describe the trade relations of the Harappans with West Asia.
Q3.    What do you know about the authors and period when Mahabharata was compiled? Explain.
Q4.    Buddha laid stress on Right of Conduct and Value.
    In the light of above message, explain his teaching on life.

**B.    Project work:-**
    (i)    Buddha's path of Enlightenment
    (ii)    Mahatma Gandhi – The Legendary Soul
    (iii)    The process Behind Framing the Indian Constitution
    (iv)    Mauryas the Empire Builders
    (v)    To reconstruct the History of Vijayanagra through the Archaeology of Hampi
    (vi)    Divine Apostle of Guru Nanak Dev

**Note:- Students should prepare the project under the following headings.**
(i)    Acknowledgment
(ii)    Index
(iii)    Cover page
(iv)    Project synopsis
(v)    Data / Statically / Map work
(vi)    Analysis explanation and interpretation.

**Activity:** Study the articles on Mahabharata by some Indian scholars. Prepare the topic for group discussion in the class after vacation.

# Subject : Physical Education

**Learn the following topics:-**

❖    Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance. Range of Motion or Flexibility)

❖    CWSN (Children with Special Needs - Divyang): Bocce/ Boccia, Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goalball,  Floorball, Wheel Chair Races and Throws, or any other Sport/Game of your choice.

❖    Children with Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/ Game must be different from Test - Proficiency in Games and Sports.

**Record File shall Include:**

❖    Practical-1: Fitness tests administration. (SAI Khelo India Test)

❖    Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.

❖    Practical-3: Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills.

# Subject : Applied Arts

**Make a poster on the given topics on A3 size portfolio.**
1. Mother's Day
2. World Environment day
3. World No Tobacco Day
4. Beat the heat
5. Yoga day
6. **PROJECT WORK -** Make a portrait or beautiful painting on canvas sheet and frame it.

# Subject : Hindustani Music

Q1. Write down the notation of Bhagaeshree in full formation with its description, Aaroh Avroh, Pakad, Sthai, Antra and Taan.

Q2. Write down the notation of Rupak Taal, in Thah (single) and Dugun (Double) speed or tempo.

Q3. Do practice of performing of Taals on hand by showing Sam, Taali, Khali.

**Note:- All the work should be done on practical file or note book.**

# Subject : Computer Science

● **Submit the Project (in soft) that you have been assigned or any other topic which is based on management.**
1. A list contains the following elements: 3, 25, 13, 6, 35, 8, 14, 45.
   Write a function to swap the content with the next value divisible by 5 so that the resultant List will look like: 25, 3, 13, 35, 6, 8, 45, 14.
2. Write a program to accept values from a user in a tuple. Add a tuple to it and display its elements one by one. Also display its maximum and minimum value.
3. Write a program to input any values for two tuples. Print it, interchange it and then compare them.
4. Write a Python program to input 'n' classes and names of their class teachers to store them in a dictionary and display the same. Also accept a particular class from the user and display the name of the class teacher of that class.
5. Write a program to store student names and their percentage in a dictionary and delete a particular student name from the dictionary. Also display the dictionary after deletion.

6. Write a Python program to input names of 'n' customers and their details like items bought, cost and phone number, etc., store them in a dictionary and display all the details in a tabular form.
7. Write a Python program to capitalize first and last letters of each word of a given string.
8. Write a Python program to remove duplicate characters of a given string.
9. Write a Python program to compute sum of digits of a given string.
10. Write a Python program to find the second most repeated word in a given string.
11. Write a Python program to change a given string to a new string where the first and last chars have been exchanged.
12. Write a Python program to multiply all the items in a list.
13. Write a Python program to get the smallest number from a list.
14. Write a Python program to append a list to the second list.
15. Write a Python program to generate and print a list of first and last 5 elements where the values are square of numbers between 1 and 30 (both included).
16. Write a Python program to get unique values from a list.
17. Write a Python program to convert a string to a list.
18. Write a Python script to concatenate the following dictionaries to create a new one: d1={'A':1,'B':2,'C':3}    d2={'D':4} Output should be: ={'A':1,'B':2,'C':3,'D':4}
19. Write a Python script to check if a given key already exists in a dictionary.
20. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys.  Sample Dictionary {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}
21. Write a Python script to merge two Python dictionaries. Write a Python program to sort a dictionary by key.
22. Write a Python program to combine two dictionary adding values for common keys.  d1 = {'a':100,'b': 200, 'c':300}        d2 = {'a':300, 'b':200, 'd':400}  Sample output: {'a':400,'b':400,'d':400,'c': 300}
23. Write a Python program to find the highest 3 values in a dictionary.
24. Write a Python program to sort a list alphabetically in a dictionary.
25. Write a Python program to count number of items in a dictionary value that is a list.


BE HAPPY AND Enjoy Your Holidays