The Laurence School, Lovedale

HOLIDAY ASSIGNMENT - JUNE 2026

CLASS XII

ENGLISH

General Instructions

- Students may choose **any one** of the following two topics for their project work.
- The project should be **handwritten** neatly in the student's own handwriting.
- The total length of the project should be approximately **1000 words**.
- Appropriate and relevant **pictures, sketches, newspaper clippings, charts, or diagrams** may be included to enhance the presentation.
- The project should contain:
    - Cover Page
    - Certificate
    - Acknowledgement
    - Index
    - Introduction
    - Main Content
    - Conclusion
    - Bibliography

Topic 1

"The Search for Peace, Hope and Human Dignity in a Troubled World"

Texts Prescribed:

- *Keeping Quiet* — Pablo Neruda
- *Lost Spring* — from *Flamingo*
- *The Last Lesson* — by Alphonse Daudet

Areas for Exploration:

- Importance of peace and self-reflection
- Child labour and poverty in society
- The value of education and language
- Human suffering, resilience and hope

Suggested Illustrations:

- Images related to peace and unity
- Photographs/sketches depicting child labour and education
- Illustrations connected to classrooms, books, or cultural identity

Topic 2

“Escapism, Beauty and the Human Desire for a Better Life”

Texts Prescribed:

- *A Thing of Beauty* — John Keats
- *The Third Level* — by Jack Finney
- *The Rattrap* — by Selma Lagerlöf

Areas for Exploration:

- Beauty as a source of comfort and inspiration
- Escapism from stress and harsh realities
- Human loneliness and the search for happiness
- Transformation through kindness and compassion

Suggested Illustrations:

- Nature scenes symbolising beauty and peace
- Vintage railway station images related to *The Third Level*
- Drawings or pictures representing the rattrap and human struggles

Students are encouraged to present the project creatively while maintaining clarity, originality, and relevance to the prescribed texts.

BUSINESS STUDIES

Grade 12 Holiday assignments for 2026-2027 (Monsoon vacation) focus on completing board-required projects. The students are tasked to select topics in the following areas:

- Marketing Management
- Stock Exchange
- Business Environment
- Consumer Protection
- Principles of Management

Presentation and Submission of Project Report
Following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 35 to 40 pages.

2. The project should be handwritten.

3. The project should be presented in a neat file.

4. The project report should be developed in the following sequence

   - Cover page should include the title of the Project, student information, school and year.
   - List of contents.
   - Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
   - Introduction.
   - Topic with suitable heading.
   - Planning and activities done during the project, if any.
   - Observations and findings of the visit.
   - Conclusions (summarized suggestions or findings, future scope of study).
   - Photographs (if any).
   - Appendix Teacher's observation.
   - Signatures of the teachers.

1. If $\theta = sin^{-1}\{sin(-600°)\}$, then one of the possible value of θ is

   $\frac{\pi}{3}$ (b) $\frac{\pi}{2}$ (c) $\frac{2\pi}{3}$ (d) $-\frac{2\pi}{3}$

2. The minimum value of $f(x) = x^3 - 12x \ in \ [0, 3]$ is

   (a) 8 (b) – 8 (c) 0 (d) - 16

3. The principal value of $\sin^{-1}(-\frac{\sqrt{3}}{2})$ is

   (a) $(-\frac{2\pi}{3})$ (b) $\left(-\frac{\pi}{3}\right)$ (c) $\frac{4\pi}{3}$ (d) $\frac{5\pi}{3}$

4. If A and B are symmetric matrices of same order, the AB- BA is a

   (a) Symmetric matrix (b) Skew Symmetric matrix (c) Zero matrix (d) Unit matrix

5. The principal value branch of sec^{-1} is

   a) $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$ b) $[0, \pi] - \left\{\frac{\pi}{2}\right\}$

   c) $(0, \pi)$ d) $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$-{0}

6. $A=\begin{bmatrix} 2 & -1 & 3 \\ -4 & 5 & 1 \end{bmatrix}$ $B=\begin{bmatrix} 2 & 3 \\ 4 & -2 \\ 1 & 5 \end{bmatrix}$

   (a) only AB is defined (b) only BA is dfined (c) Both AB and BA are defined (d) None are defined

7. If $(A - 2B) = \begin{bmatrix} 1 & -2 \\ 3 & 0 \end{bmatrix}$ and $(2A - 3B) = \begin{bmatrix} -2 & 2 \\ 3 & -3 \end{bmatrix}$ then B = ?

   a) $\begin{bmatrix} -4 & 6 \\ -3 & -3 \end{bmatrix}$ b) None of these

   c) $\begin{bmatrix} 4 & -6 \\ 3 & -3 \end{bmatrix}$ d) $\begin{bmatrix} 6 & -4 \\ -3 & 3 \end{bmatrix}$

8. Total number of possible matrices of order 3×3 with each entry 2 or 0 is

   a) 27 b) 81

   c) 9 d) 512

9. If $f(x)=\begin{cases}\frac{kx}{|x|}, & \text{if } x<0\\ 3, & \text{if } x\geq 0\end{cases}$ is continuous at $x=0$, then the value of k is

(a) -3 (b) 0 (c) 3 (d) any real number

10. Given that A is a square matrix of order 3 and $|A|=-2$, then $|adj(2A)|$ is equal to

(a) -2^6 (b) $+4$ (c) -2^8 (d) 2^8

11. Range of $\text{coses}^{-1}x$ is

a) $\left[\frac{-\pi}{2},\frac{\pi}{2}\right]$ b) $\left[\frac{-\pi}{2},\frac{\pi}{2}\right]-\{0\}$

c) None of these d) $\left(\frac{-\pi}{2},\frac{\pi}{2}\right)$

12. At x = 2, f(x) = [x] is

a) Continuous but not differentiable b) None of these

c) Continuous as well as differentiable d) Differentiable but not continuous

13. $f(x)=\frac{x}{(x^2+1)}$ is increasing in

a) None of these b) $(-1,\infty)$

c) $(-\infty,-1)\cup(1,\infty)$ d) (-1, 1)

14. The matrix $\begin{bmatrix}5 & 10 & 3\\ -2 & -4 & 6\\ -1 & -2 & b\end{bmatrix}$ is a singular matrix, if the value of b is

a) 3 b) Non-existent

c) -3 d) 0

15. $\left|cos\left[\frac{\pi}{6}+cos^{-1}\left(\frac{1}{2}\right)\right]\right|$ is equal to:

a) $\frac{1}{2}$	b) 0
c) 1	d) $\frac{\sqrt{3}}{2}$

16. If A is a matrix of order 3 and |A| = 8, then |adj A| =

a) 2 b) 1

c) $_2 6$ d) $_2 3$

17.	Find the value of $\cos^{-1}\frac{1}{2} + 2\sin^{-1}\frac{1}{2}$.
18.	A balloon, which always remains spherical on inflation, is being inflated by pumping in 900 cubic centimetres of gas per second. Find the rate at which the radius of the balloon increases when the radius is 15 cm.
19.	. Find the value of k for which $f(x) = \begin{cases} \frac{\sqrt{1+kx}-\sqrt{1-kx}}{x}, & if\ -1 \le x < 0 \\ \frac{2x+1}{x-1}, & if\ 0 \le x < 1 \end{cases}$ is continuous at x = 0
20.	Show that the function $f(x) = \lvert x-3\rvert, x \in R$, is continuous but not differentiable at $x = 3$.

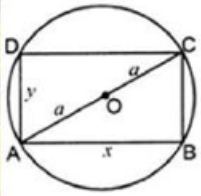
21.	Show that the relation R in the set $A = \{x: x \in Z, 0 \le x \le 12\}$ given by $R = \{(a,b): \lvert a-b\rvert$ is divisible by $4\}$ is an equivalence relation. Find the set of all elements related to 1.
22.	If $y = (\tan^{-1}x)^2$, show that $(x^2+1)^2 y_2 + 2x(x^2+1) y_1 = 2$
23.	Find the intervals in which the function $f(x) = 2x^3 - 9x^2 + 12x + 13$ is (i) increasing (ii) decreasing
24.	Find both the maximum value and the minimum value of $3x^4 - 8x^3 + 12x^2 - 48x + 25$ on the interval [0, 3].
25.	Find the maximum profit that a company can make, if the profit function is given by $P(x) = 72 + 42x - x^2$, where x is the number of units and P is the profit in rupees.
26.	If $A = \begin{pmatrix} 3 & 1 \\ -1 & 2 \end{pmatrix}$, *show that* $A^2 - 5A + 7I = 0$. *hence find* A^{-1}.

27. If $A = \begin{bmatrix} 1 & 2 & -3 \\ 3 & 2 & -2 \\ 2 & -1 & 1 \end{bmatrix}$, then find A^{-1} and use it to solve the following system of the equations :

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

28. **Read the text carefully and answer the questions:**

A gardener wants to construct a rectangular bed of garden in a circular patch of land. He takes the maximum perimeter of the rectangular region as possible. (Refer to the images given below for calculations)



(i) Find the perimeter of rectangle in terms of any one side and radius of circle.

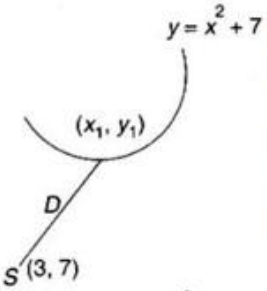
(ii) Find critical points to maximize the perimeter of rectangle?

(iii) Check for maximum or minimum value of perimeter at critical point.

OR

If a rectangle of the maximum perimeter which can be inscribed in a circle of radius 10 cm is square, then the perimeter of region.

29. An Apache helicopter of the enemy is flying along the curve given by $y = x^2 + 7$. A soldier, placed at (3, 7) want to shoot down the helicopter when it is nearest to him.



(i) If P (x_1, y_1) be the position of a helicopter on curve $y = x^2 + 7$, then find distance D from P to soldier place at (3, 7).

(ii) Find the critical point such that distance is minimum.

(iii) Verify by second derivative test that distance is minimum at (1, 8).

OR

Find the minimum distance between soldier and helicopter?

30. Read the following passage and answer the questions given below:

The relation between the height of the plant $('y' \text{ in cm})$ with respect to its exposure to the sunlight is governed by the following equation $y = 4x - \frac{1}{2}x^2$, where 'x' is the number of days exposed to the sunlight, for $x \leq 3$.

(i) Find the rate of growth of the plant with respect to the number of days exposed to the sunlight.

(ii) Does the rate of growth of the plant increase or decrease in the first three days?
What will be the height of the plant after 2 days?

Integrate the following functions

1. $\dfrac{1}{x-x^3}$

2. $\dfrac{1}{\sqrt{x+a}+\sqrt{x+b}}$

3. $\dfrac{1}{-\sqrt{\quad}^{2}}$ [Hint: Put $x=\dfrac{a}{t}$ dx

4. $\dfrac{1}{x^2(x^4+1)^{\frac{3}{4}}}$

5. $\dfrac{1}{x^{\frac{1}{2}}+x^{\frac{1}{3}}}$ [Hint: $\dfrac{1}{x^{\frac{1}{2}}+x^{\frac{1}{3}}}=\dfrac{1}{x^{\frac{1}{3}}\left(1+x^{\frac{1}{6}}\right)}$, put $x=t^6$]

6. $\dfrac{5x}{(x+1)(x^2+9)}$

7. $\dfrac{\sin x}{\sin(x-a)}$

8. $\dfrac{e^{5\log x}-e^{4\log x}}{e^{3\log x}-e^{2\log x}}$

9. $\dfrac{\cos x}{\sqrt{4-\sin^2 x}}$

10. $\dfrac{\sin^8-\cos^8 x}{1-2\sin^2 x\cos^2 x}$

11. $\dfrac{1}{\cos(x+a)\cos(x+b)}$

12. $\dfrac{x^3}{\sqrt{1-x^8}}$

13. $\dfrac{e^x}{(1+e^x)(2+e^x)}$

14. $\dfrac{1}{(x^2+1)(x^2+4)}$

15. $\cos^3 x\ e^{\log \sin x}$

16. $e^{3\log x}(x^4+1)^{-1}$

17. $f'(ax+b)\,[f(ax+b)]^n$

Application of Derivatives

1. Show that the function given by $f(x)=\dfrac{\log x}{x}$ has maximum at $x=e$.

2. The two equal sides of an isosceles triangle with fixed base b are decreasing at the rate of 3 cm per second. How fast is the area decreasing when the two equal sides are equal to the base ?

3. Find the intervals in which the function f given by

$$f(x)=\frac{4\sin x-2x-x\cos x}{2+\cos x}$$

is (i) increasing (ii) decreasing.

4. Find the intervals in which the function f given by $f(x)=x^3+\dfrac{1}{x^3}$, $x\neq 0$ is

(i) increasing (ii) decreasing.

5. Find the maximum area of an isosceles triangle inscribed in the ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ with its vertex at one end of the major axis.

6. A tank with rectangular base and rectangular sides, open at the top is to be constructed so that its depth is 2 m and volume is 8 m^3. If building of tank costs Rs 70 per sq metres for the base and Rs 45 per square metre for sides. What is the cost of least expensive tank?

7. The sum of the perimeter of a circle and square is k, where k is some constant. Prove that the sum of their areas is least when the side of square is double the radius of the circle.

8. A window is in the form of a rectangle surmounted by a semicircular opening. The total perimeter of the window is 10 m. Find the dimensions of the window to admit maximum light through the whole opening.

9. A point on the hypotenuse of a triangle is at distance a and b from the sides of the triangle.

   Show that the minimum length of the hypotenuse is $\left(a^{\frac{2}{3}}+b^{\frac{2}{3}}\right)^{\frac{3}{2}}$.

10. Find the points at which the function f given by $f(x)=(x-2)^4(x+1)^3$ has

    (i) local maxima (ii) local minima

    (iii) point of inflexion

11. Find the absolute maximum and minimum values of the function f given by

$$f(x)=\cos^2 x+\sin x,\ x\in[0,\pi]$$

12. Show that the altitude of the right circular cone of maximum volume that can be inscribed in a sphere of radius r is $\frac{4r}{3}$.

13. Let f be a function defined on $[a, b]$ such that $f'(x)>0$, for all $x\in(a, b)$. Then prove that f is an increasing function on (a, b).

14. Show that the height of the cylinder of maximum volume that can be inscribed in a sphere of radius R is $\frac{2R}{\sqrt{3}}$. Also find the maximum volume.

15. Show that height of the cylinder of greatest volume which can be inscribed in a right circular cone of height h and semi vertical angle α is one-third that of the cone and the greatest volume of cylinder is $\frac{4}{27}\pi h^3\tan^2\alpha$.

APPLIED MATHEMATICS

Write neatly the following in your Record Book:

a) Five sums each from Exercises 1.1 to 1.5

b) All the THREE solved Case-study based questions from the chapter3-Matrices.

c) All the SIX solved Case-study based questions from the Chapter4-Determinants.

Solve the following and submit it after the vacation:

a) All the 53 multiple choice questions from Chapter1

b) All the 35 multiple choice questions from Chapter2

c) Assertion-Reason type questions (Unsolved) from chapter3

d) Any 10 MCQ from Chapter 5.

ACCOUNTANCY

PRACTICE WORK:

1) **To be done in separate A4 project sheets.**
2) **No binding required. Keep it together in a simple file folder.**
3) **Use proper Journal and Ledger formats as required to write the answers.**
4) **THIS HOLIDAY ASSIGNMENT WILL ALSO BE TAKEN AS PART OF PROJECT WORK.**

Question 1. Calculate the interest on drawings of Sh. Ganesh @ 9% p.a. for the year ended 31st March, 2024, in each of the following alternative cases:

- If he withdrew ₹4,000 p.m. in the beginning of every month
- If he withdrew ₹5,000 p.m. at the end of every month
- If he withdrew ₹6,000 p.m.
- If he withdrew ₹72,000 during the year;
- If he withdrew as follows:

	₹
30th April, 2023	10,000
1st July, 2023	15,000
1st Oct., 2023	18,000
30th Nov., 2023	12,000
31st March, 2024	20,000

(vi) If he withdrew ₹12,000 in the beginning of each quarter;
(vii) If he withdrew ₹18,000 at the end of each quarter;
(viii) If he withdrew ₹18,000 during the middle of each quarter.

Question 2. X and Y are partners sharing the profits and losses in the ratio of 2:1 with capitals of ₹50,000 and ₹30,000 respectively. Show the distribution of profits in each of the following alternative cases:

- If the partnership deed is silent as to the Interest on Capital and the profits for the year are ₹9,000.
- If the partnership deed provides for Interest on Capital @ 6% p.a. and the losses for the year are ₹6,000.
- If the partnership deed provides for Interest on Capital @ 6% p.a. and the profits for the year are ₹9,000.
- If the partnership deed provides for Interest on Capital @ 6% p.a. and the profits for the year are ₹3,000.
- If the partnership deed provides for Interest on Capital @ 6% p.a. even if it involves the firm in loss and the profits for the year are ₹3,000.

Question 3. A, B and C were partners in a firm. Their capitals were A ₹1,00,000, B ₹2,00,000 and C ₹3,00,000 respectively on 1st April, 2023. According to the partnership deed they were entitled to an interest on capital @ 5% p.a. In addition, A was also entitled to draw a salary of ₹5,000 per month. C was entitled to a commission of 5% on net profits. The net profits for the year ending 31st March,

2024 were ₹3,60,000 distributed in the ratio of their capitals without providing for any of the above adjustments. The profits were to be shared in the ratio 2 : 3 : 5. Pass the necessary adjustment entry showing the workings (**adjustment table**) clearly.

Question 4. X, Y and Z are partners in a firm sharing profits and losses in the ratio 5 : 3 : 2. Their capitals (**fixed**) are ₹2,00,000; ₹1,50,000; ₹1,25,000 respectively. For the year ended 31st March, 2024 interest on capital was credited to them @ 8% instead of 10%. Give adjusting journal entry.

Question 5. On 1st April, 2025, A and B, sharing profits 2/3 and 1/3 respectively, agree to admit C into partnership on condition that he pays ₹3,00,000 as capital and ₹90,000 for 1/6 share of goodwill which he acquires equally from A and B. Subsequently, half amount of goodwill brought is withdrawn by the old partners. Write necessary journal entries to record these transactions.

Question 6. Kumar and Rao were partners in a firm sharing profits equally. They admitted Ghosh as a new partner for 1/4th share in profits. Ghosh acquired his $1/4^{th}$ share from Kumar and Rao in the ratio of 3 : 2 respectively. Ghosh brought ₹2,70,000 for his capital and ₹39,000 for 1/4th share of goodwill. Calculate new profit-sharing ratio of Kumar, Rao and Ghosh and pass necessary journal entries for the above transactions in the books of the firm.

Question 7. Piyush and Deepika are partners sharing profits in the ratio 7 : 3. They admit Seema as a new partner, paying ₹40,000 as premium for 1/5 share. The new ratio being 5 : 3 : 2. Pass necessary journal entries.

Question 8. A and B are partners sharing profits in the ratio of 5 : 3. They admit C as a partner for 1/3rd share. His share of goodwill is ₹32,000. Give journal entries in the following cases:
(a) When the amount of goodwill is paid privately.
(b) When the goodwill is received in cash and retained in the business.
(c) When the goodwill is received in cash and withdrawn by old partners.
(d) When C is unable to bring the goodwill share in cash.

CBSE BOARD PROJECT WORK:

Complete the respective CBSE BOARD PROJECT WORK (both projects in one proper Separate PROJECT FILE file) - according to the Email sent to all the students individually for the ACCOUNTANCY TOPICS as assigned to each one of you respectively as per your respective Class-Group.

HISTORY

CBSE PROJECT HISTORY- 027

FEW SUGGESTIVE TOPICS FOR CLASS XII PROJECTS

1. The Indus Valley Civilization-
Archeological Excavations and New Perspectives
2. The History and Legacy of Mauryan Empire
3. "Mahabharat"- The Great Epic of India
4. The History and Culture of the Vedic period
5. Buddha Charita
6. A Comprehensive History of Jainism
7. Bhakti Movement- Multiple interpretations and commentaries.
8. "The Mystical Dimensions of Sufism
9. Global legacy of Gandhian ideas
10.The Architectural Culture of the Vijayanagar Empire
11.Life of women in the Mughal rural society
12.Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India
13. The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity
14.The Philosophy of Guru Nanak Dev
15.The Vision of Kabir 16.An insight into the Indian Constitution

given below: - Guidelines for History Project Work: 20 Marks One Project to be done throughout the session, as per the existing scheme.

1. Steps involved in the conduct of the project: Students may work upon the following lines as a suggested flow chart: Choose a Title/Topic Need of the Study, Objective of the Study Hypothesis Content -Timeline, Maps, Mind maps, Pictures, etc. (Organization of Material/Data Present Material/Data) Analyzing the Material/Data for Conclusion Draw the Relevant Conclusion Bibliography

2. Expected Checklist for the Project Work: • Introduction of topic/title • Identifying the causes, events, consequences and/or remedies • Various stakeholders and effect on each of them • Advantages and disadvantages of situations or issues identified • Short-term and long-term implications of strategies suggested during research • Validity, reliability, appropriateness, and relevance of data used for research work and for presentation in the project file • Presentation and writing that is succinct and coherent in project file • Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc. 3. Assessment of Project Work: • Project Work has broadly the following phases: Synopsis/ Initiation, Data Collection, Data Analysis and Interpretation, Conclusion. •

GEOGRAPHY

Subject : Geography Practical

Topic : Data Processing

Prepare practical file (Record) for Ch 2: Data processing. The details are mentioned below.

Points to write:

1. Measures of central tendency
   a. Mean
   b. Median
   c. Mode
2. Computing mean from ungrouped data
   a. Direct method
      - Data to be used as discussed in class
      - Calculation to be shown using formula
      - Table to be created using data provided.
   b. Indirect method
      - Data to be used as discussed in class
      - Calculation to be shown using formula
      - Table to be created using data provided.
3. Computing mean from ungrouped data
   a. Direct method
      - Data to be used as discussed in class
      - Calculation to be shown using formula
      - Table to be created using data provided.
   b. Indirect method
      - Data to be used as discussed in class
      - Calculation to be shown using formula
      - Table to be created using data provided.
4. Median
   - Computing median using ungrouped data
5. Mode
   - Computing median using ungrouped data

Record should be submitted on the first day of the school reopening date.
Record should be free from error and any whitener mark.

PSYCHOLOGY

INSTRUCTIONS:

i) Do a case analysis of a person with psychological disorders.

ii) Prepare a project on any one of the following disorders. (Given in a separate sheet)

iii) Net could be referred for information.

iv) Project should be brief and to the point.

v) Relevant pictures of the disorders could be included.

vi) Students could prepare the project in the same order of the contents given below.

CONTENTS OF THE CASE PROFILE OF THE INDIVIDUAL WITH PSYCHIATRIC DISORDER

Acknowledgement
Introduction of the Case Profile (Purpose of the file in 12th STD)
Introduction of the Disorder (Disorder chosen for this project)
Case History (Patient)
Personal history
Family history
History of present illness
Clinical features (Symptoms shown by the patient due to disorder)
Diagnosis (The patient's disorder)
Treatment (therapies, counseling, medical etc.,)
Prognosis (speed of recovery)
Conclusion (summary of the project)
References'/ Bibliography

Note: Final handwritten copy to be made as per the guidance provided in the class. This preparation is for the SSCE practical exam. The final document will be evaluated and marked in the forthcoming Academic practical exam session.

(Select anyone)

DISORDERS

1. Schizophrenia
2. Depression

3. Mania
4. ADHD – ATTENTION DEFCIT HYPERACTIVITY DISORDER
5. Phobias
6. OCD – Obsessive Compulsive Disorder
7. Amnesia
8. Multiple Personality disorder
9. Post-Traumatic Stress disorder
10. Mental Retardation
11. Autism
12. Eating disorders
13. Addictive Disorders
13. Learning disorder

Any other disorder if you like to do a project on, you could.

FOR REFERNCE FOR THE STUDENTS

CASE STUDY FORMAT

Developing a case profile would primarily involve the use of qualitative techniques, such as observation, interview, survey, etc. During preparing a case profile, the students would gain a first-hand experience in the use of these qualitative techniques. The main objective of preparing a case profile is to understand the individual in totality. This would further help in establishing the cause-and-effect relationship more accurately. **The students may prepare a case profile of an individual having special needs like learning disability, autism, down's syndrome, etc. or those with interpersonal social problems, i.e. poor body image, obesity, temper tantrums, substance abuse, not getting along with peers, withdrawn, etc.** They may be encouraged to find out the background information and developmental history of the individual. The students are required to identify the method of inquiry, i.e. interview or observation that they would like to undertake to get complete information of the case. A case profile may be prepared based on the suggested format.

Suggested Format for Preparing a Case Profile

A format for case presentation covering broad aspects is given below. It is suggested that the case be developed in a narrative format along the following points:

1. *Introduction*
   - A brief introduction of about one or two pages presenting the nature of the problem, its incidence, likely causes, and possible counselling outcomes.
   - A half page (brief) summary of the case.
2. *Identification of Data*
   - Name (may be fictitious)
   - Diagnosed Problem
   - Voluntary or Referral (i.e., by whom referred — such as teacher, parent, sibling, etc.)
3. *Case History*
   - A paragraph giving age, gender, school attended, class (grade) presently enrolled in, etc.
   - Information about socio-economic status (SES) consisting of information about mother's/father's education and occupation, family income, house type, number of members in the family— brothers, sisters and their birth order, adjustment in the family, etc.
   - Information about physical health, physical characteristics (e.g., height and weight), any disability/illness (in the past and present), etc.
   - Any professional help taken (past and present), giving a brief history of the problem, attitude towards counselling (indicating the motivation to seek help, etc.).
   - Recording signs (i.e., what is observed in terms of facial expressions, mannerisms, etc.) and symptoms (i.e., what the subject reports, for example, fears, worry, tension, sleeplessness, etc.).
   - Concluding Comments

Science Stream 12 B

PHYSICS

1. Working Model:

   Prepare and submit a working model based on any topic from the Class XII Physics syllabus. The model should be functional and demonstrate the underlying physics principles clearly.

2. Physics Record Book:

   Complete and bring your Physics practical record book.

BIOLOGY

Complete the following:

1. Record work.
2. Project work.

ECONOMICS

Guidelines for Project Work in Economics

The students are required to prepare a **handwritten project** for **20 marks** as part of the **CBSE practical examination**. The project must be based on **any one topic** from the list provided in the guidelines.

Please ensure that the project is:

- Neatly handwritten
- Well-organized and informative
- Includes relevant illustrations, headings, and subheadings

The objectives of the project work are to enable learners to:

- probe deeper into theoretical concepts learnt in class XII
- analyse and evaluate real world economic scenarios using theoretical constructs and arguments
- demonstrate the learning of economic theory
- follow up aspects of economics in which learners have interest
- develop the communication skills to argue logically
- The expectations of the project work are that:
- learners will complete only ONE project in each academic session
- project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written
- it will be an independent, self-directed piece of study

Scope of the project:

Learners may work upon the following lines as a suggested flow chart:

- Choose a title/topic
- Collection of the research material/data
- Organization of material/data
- Present material/data
- Analysing the material/data for conclusion
- Draw the relevant conclusion
- Presentation of the Project Work

Expected Checklist:

- Introduction of topic/title
- Identifying the causes, consequences and/or remedies

- Various stakeholders and effect on each of them
- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of economic strategies suggested in the course of research
- Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file
- Presentation and writing that is succinct and coherent in project file
- Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

Mode of presentation/submission of the Project:

At the end of the stipulated term, each learner will present the research work in the Project File to the External and Internal examiner. The questions should be asked from the Research Work/ Project File of the learner. The Internal Examiner should ensure that the study submitted by the learner is his/her own original work. In case of any doubt, authenticity should be checked and verified.

Marking Scheme:

Marks are suggested to be given as –

S. No	Heading	Marks Allotted
1.	Relevance of the Topic	3
2.	Knowledge Content/ Research Work	6
3.	Presentation Technique	3
4.	Viva-Voce	8
	Total	20

Suggestive List of Projects:

- 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
- Sarva Shiksha Abhiyan – Cost Ratio Benefits
- Golden Quadrilateral- Cost ratio benefit
- Minimum Support Prices
- Relation between Stock Price Index and Economic Health of a 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 crisis
- 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
- Aatmanirbhar Bharat
- e-Rupee (e- ₹)
- Sri Lanka's Economic Crisis
- Sustainable Development Goals (SDG's)
- Environmental Crisis
- Comparative Study of Economies (Maximum three economies)
- New Education Policy (NEP) 2020: A Promise for a New Education System
- G-20: Inclusive and Action Oriented • Amrit Kaal: Empowered and Inclusive Economy
- Cashless Economy
- Any other newspaper article and its evaluation on basis of economic principles
- Any other topic

POLITICAL SCIENCE

Guidelines for Class 12 Political Science Projects

1. Topic Selection

- Choose a topic from the NCERT syllabus (*Contemporary World Politics* or *Politics in India Since Independence*).
- Examples: Cold War Era, Globalisation, Emergency in India, India's relations with neighbours, UN and peacekeeping.
- Ensure the topic is **specific, researchable, and relevant** to CBSE curriculum.

2. Structure of the Project

- **Cover Page:** Title, Student's name, Roll number, Class, School.
- **Acknowledgement & Certificate:** Acknowledge guidance from teacher; certificate of originality.
- **Index:** List of sections with page numbers.
- **Introduction:** Brief background of the topic (150–200 words).
- **Main Content:**
    - Explanation of concepts (aligned with NCERT).
    - Case studies, examples, maps, charts, or political cartoons.
    - Analysis of causes, impacts, and relevance.
- **Conclusion:** Summarize key findings in 150 words.
- **Bibliography:** Mention NCERT textbook, reference books, websites, or newspapers used.

3. Presentation

- Use **clear headings, subheadings, and bullet points**.
- Include **visual aids**: maps, charts, diagrams, or newspaper clippings.
- Keep handwriting neat or use typed format if allowed.
- Length: **20-30 pages** (including visuals).

4. Originality & Creativity

- Avoid copy-pasting; write in your own words.
- Add personal insights, reflections, or connections to current events.
- Use **colour coding** for maps and charts to make them visually appealing.

5. Submission Guidelines

- Submit the **first draft** on the first day after vacation.
- Avoid Late submissions.

Artificial Intelligence

As per the CBSE Class XII Artificial Intelligence curriculum, students are required to complete a **Capstone Project** as part of their practical evaluation.

Students are advised to utilize the summer vacation to complete **one Artificial Intelligence-related certification course** offered by a recognized and reputable platform or organization.

The knowledge and skills acquired through this certification will be applied in the development of the Capstone Project during the academic session.

Parents are requested to ensure that their ward completes the above requirement during the vacation period and retains all certificates and supporting documents for assessment purposes.

Thank you for your cooperation.

PFB AI Courses for your reference:

https://cloud.google.com/learn/training/machinelearning-ai

https://skillsbuild.org/students/course-catalog/artificial-intelligence

https://www.coursera.org/courses?query=free&skills=Artificial%20Intelligence

https://www.udemy.com/topic/machine-learning/

PAINTING

Theme-Based Fine Arts Assignments for Class XII

Category A: Conceptual Drawing & Sketching (Pencil / Charcoal / Pen & Ink)

1. Theme: "The Passage of Time"

- Medium: Graphite pencil or charcoal on A4 paper.
- Task: Create a still-life composition featuring three objects that symbolize youth, maturity, and old age (e.g., a fresh flower, a burning candle, an antique pocket watch, or wrinkled hands holding an object).
- Focus: Master structural drawing, tonal values, and contrasting textures (smooth vs. weathered surfaces).

2. Theme: "Interstices" (The Spaces In-Between)

- Medium: Fine-liner pens or ink wash on A4 paper.
- Task: Look at architectural elements around your home or neighborhood—like a half-open doorway, stairs leading into shadow, or a view framed strictly through a window pane. Capture the tension between the indoor and outdoor worlds.
- Focus: Linear perspective, architectural rendering, and dramatic high-contrast light and shadow
(chiaroscuro).

3. Theme: "Unspoken Emotions" (Expressive Portraiture)

- Medium: Soft pastels or charcoal on A4 paper.
- Task: Draw a close-up portrait of a family member or a self-portrait expressing a complex internal state (e.g., introspection, exhaustion, hope, or nostalgia). Avoid a generic smiling pose.
- Focus: Human anatomy, bone structure, and capturing realistic skin folds and emotional depth.

4. Theme: "Metamorphosis"

- Medium: Mixed media drawing (Inks, pencils, and light washes) on A4 paper.

- Task: Create a surrealistic drawing where an organic object blends into a mechanical or geometric
form (e.g., tree roots turning into circuit boards, or a bird's wing dissolving into origami folds).
- Focus: Creative imagination, seamless blending of disparate textures, and composition balance.

Category B: Expressive Watercolour Painting

5. Theme: "The Monsoon Blues"

- Medium: Transparent watercolor on 300 GSM A4 watercolor paper.
- Task: Paint a street scene immediately after a heavy downpour. Capture the reflections of vehicles, streetlights, or pedestrians in rain puddles on the asphalt.
- Focus: Mastering the wet-on-wet technique, soft edges, and understanding how water distorts light and reflections.

6. Theme: "Golden Hour Nostalgia"

- Medium: Watercolor on A4 paper.

- Task: Paint a landscape or cityscape bathed in the warm, long-shadowed light of a late afternoon sun (around 5:00 PM). Focus on how the warm light shifts local colors (e.g., green leaves turning golden- orange).
- Focus: Color theory, capturing atmospheric perspective, and managing warm vs. cool temperature contrasts in shadows.

7. Theme: "Rusty and Forgotten"

- Medium: Watercolor (utilizing dry brush techniques) on A4 paper.
- Task: Paint a close-up study of an old, abandoned object—an ancient lock on a wooden door, a discarded bicycle, or a dented, rusty metal teapot.
- Focus: Controlled watercolor application, texture replication (rough wood grain, flaking rust), and detailed layering.

Category C: Cultural & Contemporary Studies

8. Theme: "Reimagined Heritage"

- Medium: Watercolor and fine-liner pens on A4 paper.

- Task: Pick an element from Indian traditional art forms (like Miniature painting, Madhubani, or Warli) and place it in a modern context. For example, paint a contemporary urban subway station populated by figures rendered strictly in the style of Rajasthani or Mughal miniatures.
- Focus: Understanding stylistic conventions, flat color execution, and narrative storytelling.

9. Theme: "The Modern Marketplace" (Live Sketching study)

- Medium: Watercolor pencils or rapid watercolor wash on A4 paper.
- Task: Visit a local fruit market, flower bazaar, or street vendor. Capture the chaotic energy, clusters of people, and vibrant displays of goods.
- Focus: Speed sketching, capturing gesture and movement, and blocking in large color masses quickly.

10. Theme: "Chaos and Order"

- Medium: Choice of drawing or watercolor medium on A4 paper.
- Task: Create a composition that visually pits structured geometric elements (like buildings, grids, or tiles) against chaotic, organic forms (like tangled electric wires, overgrown vines, or smoke).
- Focus: Conceptual thinking, negative space utilization, and dynamic visual balance.

Student Instructions for Submission:

- All works must be executed cleanly within a 1-inch taped margin on standard A4 paper.
- For watercolor assignments, use a minimum of 300 GSM cold-pressed paper to prevent buckling.
- Maintain a process journal alongside these sheets to document your initial rough thumbnails and color-swatch trials for each theme.