GD GOENKA PUBLIC SCHOOL, JHAJJAR

HOLIDAY engagement
2025-26

CLASS - XII

From The Principal's Desk

Dear Parents,

Hearty Greetings!!

This letter is to inform you about the **'Holiday Engagement Work'** assigned to the child for the summer holidays.

We believe that continued learning and engagement during the holiday is beneficial for the child's academic development. The assigned tasks are designed to reinforce the concepts learned in the class and provide opportunities for creative exploration.

The work will be accessible on:

➢ **Edunext**

➢ **School Website**

➢ **Broadcast Groups**

We encourage you to support the child in completing this work. Please foster a learning environment at home. Avoid to put the pressure on the child.

If you have any questions or concern please don't hesitate to contact us at **info@gdgoenkajhajjar.com** and **7056627016, 17, 18.**

Wish you a happy and safe summer holidays.

Warm Regards

ANITA S RANA

(PRINCIPAL)

ENGLISH

To quote Philip Adams
  "When people say to me: 'How do you do so many things?' 'I often answer them, without meaning to be cruel: 'How do you do so little?'"

MAINTAIN A RESILIENT AND GROWTH ORIENTED MINDSET !
One must develop routines and rituals that are consistent. These are needed to Prime yourself for focussed work and to overcome inertia.
While intuition and leisure play a vital role in recognizing patterns and making constructive choices it needs to be balanced with critical thinking and subjective analysis.

GENERAL INSTRUCTIONS:
Do the assignment in your notebook:
Write an essay! Practice Brainstorming and outlining! Length is important! Top scoring College admission essays have averaged about 400-500 words.

We need about 300-350 words from you on any ONE of the four topics given below:

1. ' Social media is taking away our social skills '
   Write an essay supporting the statement and use examples from history, literature, and personal and popular experience to support your position.

2. If you rest, you rust.' What does ' rest ' and ' rust ' mean ?
   Can Rest be interconnected with laziness and indolence ? You may explain with examples.
   Is there a correlation between sleeping hours and work efficiency ? Do they hold true for all ?
   Gather evidence: its importance to moving forward. Rest is critical to progress because it allows us to function better.
   Summarize arguments and examples.

3. Modern ethics is suspicious of those who serve only their own self interest and instead praises the selfless among us for their dedication to the greater good. However this distinction is less clear in the context of a Capitalist society, where each individual citizen is responsible for his own welfare and cannot rely on society to help him in times of need. Indeed, one must sometimes act in selfish ways to survive.
   Is it better to focus on your own good or that of others ? write an essay answering this question and support your essay with adequate reasoning and examples taken

from your reading, studies, experiences or observations.

4. What determines success in life is not intelligence or talent, but character: those qualities gained both from living in an honourable and truthful manner and from learning to deal with adversity and hardships.

   Without character, an individual has no hope of true success. Even when competing against opponents of considerable intelligence or strength, those individuals who possess strong character will ultimately win.

   Does a person's character determine that person's success in life ?

   Plan and write an essay supporting your position with reasoning and examples taken from your reading, studies, experiences or observations.

NOTE : This essay / article will be included in your Internal Assessment CBSE marks. The Practical component will be partially based on this assignment.

Reading List :
We are providing a wonderful array of book recommendations for your summer break : Use pages of books to destress and enjoy them as relaxing slots in your study schedule.

CURATED COMPILATIONS FROM ENGLISH DEPARTMENT
Let us do away with monotony and explore the wonderful world of fiction. A great work of fiction can allow us to see the truths that may be hidden from us in real life.

- The Catcher in the Rye   J D Salinger
- Lord of the Flies   William Golding
- The Thorn Birds   Colleen Mc Cullough
- Gone with the Wind   Margaret Mitchell
- The Godfather   Mario Puzo
- Kane and Abel   Jeffrey Archer
- Siddhartha   Herman Hesse
- The Kite Runner   Khaled Hosseini

We should look for books that make us think harder, not easier. Personal growth is tucked away in the pages that question our world view !

- Think and Grow Rich   Napolean Hill
- The Power of Now   Eckhart Tolle
- Freakonomics   Steven D Levitt
- Vagabonding   Rolf Potts

CLASSIC FAVOURITES

TOP FIVE AMERICAN NOVELS

- Of Mice and Men — John Steinbeck
- Moby Dick — Herman Melville
- The Scarlet Letter — Nathaniel Hawthorne
- The Great Gatsby — F Scott Fitzgerald
- To Kill a Mockingbird — Harper Lee

TOP FIVE BRITISH NOVELS

- Pride and Prejudice — Jane Austen
- Wuthering Heights — Emily Bronte
- Mayor of Casterbridge — Thomas Hardy
- Oliver Twist — Charles Dickens
- Mill on the Floss — George Elliot

TOP FIVE BOOKS BY INDIAN AUTHORS

- A Suitable Boy — Vikram Seth
- God of Small Things — Arundhati Roy
- Train to Pakistan — Khushwant Singh
- Difficult Daughters — Manju Kapoor
- The Namesake — Jhumpa Lahiri

TOP FIVE BOOKS SET IN INDIA

- The Far Pavilions — M M Kaye
- The City of Djinns — William Darymple
- Shantaram — Gregory David Roberts
- The White Tiger — Aravind Adiga
- City of Joy — Dominique Lapierre

TOP FIVE MOVIE/BOOK ADAPTATIONS

- The Godfather — Mario Puzo
- Forrest Gump — Winston Groom
- The Shawshank Redemption — Stephen King
- Murder on the Orient Express — Agatha Christie
- The Notebook — Nicholas Sparks

MATHEMATICS

MATRICES AND DETERMINANTS

1.

Choose the correct(√) option: --------

(i)

If R = {(x, y): x, y ∈ Z, $x^2 + y^2 \leq 4$} is a relation is set Z, then domain of R is
(a) {0, 1, 2}   (b) {−2, −1, 0, 1, 2}   (c) {0, −1, −2}   (d) {−1, 0, 1}

(ii)

Let the relation R in the set A = {x ∈ Z : $0 \leq x \leq 12$}, given by R = {(a, b) : |a − b| is a multiple of 4}. Then [1], the equivalence class containing 1, is :
(a) {1, 5, 9}   (b) {0, 1, 2, 5}   (c) φ   (d) A

(iii)

Given triangles with sides T_1 : 3, 4, 5; T_2 : 5, 12, 13; T_3 : 6, 8, 10; T_4 : 4, 7, 9 and a relation R in set of triangles defined as R = {(Δ_1, Δ_2) : Δ_1 is similar to Δ_2}. Which triangles belong to the same equivalence class?
(a) T_1 and T_2 (b) T_2 and T_3 (c) T_1 and T_3 (d) T_1 and T_4

(iv)

A relation R in set A = {1, 2, 3} is defined as R = {(1, 1), (1, 2), (2, 2), (3, 3)}. Which of the following ordered pair in R shall be removed to make it an equivalence relation in A?
(a) (1, 1)   (b) (1, 2)   (c) (2, 2)   (d) (3, 3)

(v)

Given set A = {1, 2, 3} and a relation R = {(1, 2), (2, 1)}, the relation R will be
(a) reflexive if (1, 1) is added   (b) symmetric if (2, 3) is added
(c) transitive if (1, 1) is added   (d) symmetric if (3, 2) is added

2

If $A = \begin{bmatrix} 3 & -2 \\ 4 & -2 \end{bmatrix}$ and $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, find the value of 'k' so that $A^2 = kA - 2I$.

3   For what value (s) of x, the matrix $\begin{pmatrix} -1 & 0 & y-x \\ 0 & 0 & 0 \\ 0 & x+y-6 & 5 \end{pmatrix}$ is a diagonal matrix?

4   For what value (s) of a + x, the matrix $\begin{pmatrix} 6 & 0 & 0 \\ 0 & 2a+6 & 0 \\ 0 & 0 & x+3 \end{pmatrix}$ is a scalar matrix?

5. If $R(\Theta) = \begin{bmatrix} cos\theta & sin\theta \\ -sin\theta & cos\theta \end{bmatrix}$, show that $R(\phi) \cdot R(\theta) = R(\theta + \phi)$

6. Find the matrix X such that, $\begin{bmatrix} 2 & -1 \\ 0 & 1 \\ -2 & 4 \end{bmatrix} X = \begin{bmatrix} -1 & -8 & -10 \\ 3 & 4 & 0 \\ 10 & 20 & 10 \end{bmatrix}$.

7. Find x, if $\begin{bmatrix} x & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ -2 & -3 \end{bmatrix} \begin{bmatrix} x \\ 3 \end{bmatrix} = O$

8. Find a 2 x 2 matrix B such that $\begin{bmatrix} 2 & 5 \\ -3 & 7 \end{bmatrix} B = \begin{bmatrix} 17 & -1 \\ 47 & -13 \end{bmatrix}$.

9. Find the values of x and y, if $\begin{bmatrix} x^2 \\ y^2 \end{bmatrix} - \begin{bmatrix} 5x \\ 6y \end{bmatrix} = 3\begin{bmatrix} -2 \\ -3 \end{bmatrix}$

10. If $A = \begin{bmatrix} 0 & 2 \\ 3 & -4 \end{bmatrix}$ and $kA = \begin{bmatrix} 0 & 3a \\ 2b & 24 \end{bmatrix}$, then find the values of k, a and b.
Hence, find $(b)^{a-k}$.

11. If $\begin{bmatrix} 2x & 3 \end{bmatrix} \begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} x \\ 8 \end{bmatrix} = 0$, find the value of x,

12. Given $A = \begin{bmatrix} 5 & 0 & 4 \\ 2 & 3 & 2 \\ 1 & 2 & 1 \end{bmatrix}$, $B^{-1} = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$, compute $(AB)^{-1}$.

13. Show that the points (a+5, a-4), (a-2, a+3) and (a, a) do not lie on straight line.

14. If A is 3x3 matrix, $|adjA| = 16$, find $|A|$.

15 If $A = \begin{pmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{pmatrix}$ and $A^3 - 6A^2 + 7A + kI_3 = O$, find k.

Solve the following system of equations using matrix method :

Q16. $5x + 2y = 4$
$7x + 3y = 5$

Q17. $3x + 4y - 5 = 0$
$x - y + 3 = 0$

Q18. $3x - 2y + 3z = 8$
$2x + y - z = 1$
$4x - 3y + 2z = 4$

Q19. $x - y + z = -1$
$2x + y - z = 2$
$x - 2y - z = 4$

Q20. $x + y + z = 4$
$2x - y + z = -1$
$2x + y - 3 = -9$

Q21. $4x + 2y + 3z = 5$
$x - 2y + z = -4$
$3x - y - 2z = 3$

22 Use product $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix}\begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$ to solve the system of equations $x + 3z = 9$,

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

23 Three schools A, B and C organized a mela for collecting funds for helping the rehabilitation of flood victims. They sold handmade fans, mats and plates from recycled material at a cost of ₹25, ₹100 and ₹50 each. The number of articles sold are given below :

School / Article	A	B	C
Hand fans	40	25	35
Mats	50	40	50
Plates	20	30	40

Find the funds collected by each school separately by selling the above articles. Also find the total funds collected for the purpose.

CONTINUITY AND DIFFERENTIABILITY

1 Select the correct option (s) in the followings.

(i)

Value of $\dfrac{d}{dx}\left(\sin^{-1}\dfrac{x}{3}+\cos^{-1}\dfrac{x}{3}\right)$ is equal to

(a) 0   (b) $\dfrac{1}{3}$ (c) 3   (d) Not possible to find

(ii)

The derivative of $|x|$ at $x \neq 0$

(a) is 1   (b) is –1   (c) is 0   (d) is ± 1

(iii) Consider the following statements :

I: $\displaystyle\lim_{x\to 0}\sin\dfrac{1}{x}$ doesn't exist.

II: $\displaystyle\lim_{x\to 0} x\sin\dfrac{1}{x}$ exists.

(iv)

Which of the above statements is/are correct?

(a) I only   (b) II only   (c) Both I and II   (d) Neither I nor II

If $f(x)=2|x|+3|\sin x|+6,$ then the right hand derivative of $f(x)$ at $x=0$ is

(v)

(a) 6   (b) 5   (c) 3   (d) 2

The function $f(x)=x|x|$ is

(a) continuous and differentiable at $x=0$
(b) continuous but not differentiable at $x=0$
(c) differentiable but not continuous at $x=0$
(d) neither differentiable nor continuous at $x=0$

2.

Find $\dfrac{dy}{dx}$ of following functions:-

(i) y=log(sinx)   (ii) $y=\sqrt{e^{\sqrt{x}}}$ (iii) $y=\log_{10} x$ (iv) $y=e^{2x+3}$

(v) $y=\tan^{-1}\sqrt{x}$ (vi) $y=2^{\sin x}$ (vii) $y=\log(\log x)$ (viii) $y=3\sin^{-1} 2x$ (ix) $y=\sqrt{3x+5}$ (x) $y=x^x$

3

.If $f(x)=\begin{cases}\dfrac{5x+|x|}{3x} & if \quad x\neq 0 \\ 2 & if \quad x=0\end{cases}$, Show that f(x) is discontinuous at x=0.

4

Show that function f, defined by $f(x) = \begin{cases} 2x & if & x < 2 \\ 2 & if & x = 2 \\ x^2 & if & x > 2 \end{cases}$, is discontinuous at x=2.

5

.Find the value of k if $f(x) = \begin{cases} \dfrac{\sin 5x}{3x} & if & x \neq 0 \\ k & if & x = 0 \end{cases}$, is continuous at x=0.

6

Find $\dfrac{dy}{dx}$ of following functions :-(i) $y = \tan^{-1}\left(\dfrac{1 - \cos x}{\sin x}\right)$ (ii) $y = \sqrt{\dfrac{\sec x - 1}{\sec x + 1}}$. (iii $y = \log\sqrt{\dfrac{1 + \sin x}{1 - \sin x}}$

(iv) $y = \tan^{-1}\left(\dfrac{\sqrt{1 + x^2} - 1}{x}\right)$ (v) $y = \log\left(\sqrt{\dfrac{1 + \cos^2 x}{1 - e^{2x}}}\right)$ (vi) $y = 5^{\log(\sin x)} + \sin^x x$ (vii) $y = (\log x)^x + x^{\log x}$

PHYSICS

Science is all around us, and making science projects is a great way to explore its wonders. From the intricate details of nature to the complexities of technology, science projects offer a chance to learn, create, and innovate. So, what will you create during these vacations? A working model, an exhibit, or something entirely new? The possibilities are endless!

INVESTIGATORY PROJECT

The objective of this engagement work is to apply theoretical concepts of physics to real-world problems or phenomena, demonstrating understanding and creativity. This is how you can plan:

1. Choose a topic related to physics, such as mechanics, thermodynamics, electromagnetism, or optics.
2. Conduct thorough research on the topic, gathering information from credible sources.
3. Create a project, model, or exhibit that demonstrates understanding of the topic.
4. Encourage innovative and creative approaches to presenting the topic.
5. Ensure that the project accurately represents scientific concepts and principles.

The project is to be submitted in following three formats:

1. Written Report: Include a written report explaining the topic, research, and project.
2. Visual Presentation: Create a visual presentation (poster, model, or exhibit) that showcases the project.
3. Oral Presentation: Prepare a short oral presentation (5-10 minutes) to explain the project.

SOME SUGGESTED TOPICS:

1. *Build a walking robot*
2. *Developing automatic doorbell with pizzo electricity*
3. *Power generation from footpath*
5. *Quantum computing -The next Tech Revolution.*
6. *Space Debris - Mitigation strategies*
7. *Climate Engineering -A solution or Threat*
8. *AI in War & Defence*
9. *The world of Nanotechnology*
10. *Eliminating single use plastics*
11. *Physics and Phonetics*
12. *Controlling microplastics*
13. *Semiconductor empire*
14. *Science of zodiacs*

CHEMISTRY

INVESTIGATORY PROJECT

GENERAL INSTRUCTIONS:
- Students are required to submit holiday home work in the form of a Project file on any relevant topic of chemistry.

BIOLOGY

GENERAL INSTRUCTIONS:
1. *All experiments to be written in the practical file.*
2. *Prepare an **investigatory project** on any topic of your interest related to BIOLOGY.*
3. *The project should be hand written with a case file attached to it.*
4. *The given assignment to be done in the Biology notebook.*

TOPIC – Human Health And Disease
1. Name the causative organism of following diseases?
2. What are the symptoms of the following diseases?
3. What causes chills in malarial?
4. Give an example of Primary lymphoid organs?
5. Expand the term AIDS.
6. What is the causative organism of AIDS?
7. What is the mode of HIV infection?
8. What is the diagnostic test for AIDS?
9. Expand the terms – NACO, NGO, WHO.
10. Which of the following is passive immunity and why? Natural infection, vaccine, mother colostrums.
11. Classify lymphoid organs on the basis of the maturation and proliferation of lymphocytes.
12. What are lymph nodes? What is their role?
13. What are carcinogens? Give examples.
14. How is biopsy done?
15. Write a short note on the following diseases, their causative, symptoms and mode of transmission.
    - **(i)** Malaria
    - **(ii)** Typhoid

(iii) Amoebiasis

(iv) Elephantiasis

16. Distinguish between the following
    (i) Primary response and secondary response
    (ii) B – Lymphocytes and T – lymphocytes
    (iii) Active and passive immunity

17. Complete the following table

S.No.	Disease	Causative	Symptoms
(i)	Ascariasis	A	Internal bleeding and muscular pain
(ii)	B	C	Inflammation and severe swelling in one of lower limbs
(iii)	Amoebiasis	D	e
(iv)	F	Microsporum	g

18. Complete the following table.

S.No.	Disease	Causative	Symptoms
(i)	Typhoid	a	Sustained high fever
(ii)	b	c	Fever with chills

S.No.	Disease	Causative	Symptoms
(iii)	Cold	d	Sore throat and cough
(iv)	e	Plasmodium vivax	f
(v)	g	Entamoeba	Stools
(vi)	Ascariasis	Ascaris	b
(vii)	i	Wuchereria	j
viii)	k	Trichophyton	Itching, dry skin

HISTORY

1. Write an essay on (a) Town planning (b) Religion of the Harappan civilisation. Word limit-approximately-350 words each. Support your analysis, with the help of relevant pictures or maps.

2. **CBSE PROJECT**
   Complete the final draft of your CBSE Project on any of the themes chosen by you. The theme must be pre-approved by your teacher. Supplement it with relevant pictures, maps and statistical data, wherever possible.

   Suggested topics-
   1. Any aspect of the Harappan civilisation- Art/ Religion/Trade/Town Planning
   2. The History and Legacy of King Ashoka
   3. Rise of Buddhism or Jainism
   4. Bhakti saints- Kabir or Meerabai
   5. The Philosophy of Guru Nanak Dev
   6. Women in the Mahabharata
   7. Life of women in the Mughal rural society
   8. Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India
   9. The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity
   10. An insight into the Indian Constitution
   11. A study of Stupas and Pillar edicts
   12. A study of Mughal or Vijayanagara architecture
   13. Rise of the Sufi movement in India
   14. Global legacy of Gandhian ideas
       Or any other topic approved by your teacher.

POLITICAL SCIENCE

I-Do research work during the holidays for any <u>one</u> topic related to your syllabus. **Certain** topics with guidelines are given below. You can choose any other topic from Book1 or Book2.This research will be for your CBSE project.

1. **The End of Bipolarity**
   Disintegration of Soviet Union, Unipolar World, Middle East Crisis – Afghanistan, Gulf War, Democratic Politics and Democratization – Commonwealth of Independent States.

2. **Contemporary Centres of Power**
   Organizations: European Union, ASEAN, Rise of China. Nations: Russia, China, Japan and South Korea.

3. **Contemporary South Asia**
   Conflicts and efforts for Peace and Democratization in South Asia: Pakistan, Nepal, Bangladesh, Sri Lanka, Maldives.

4. **United Nations and its Organizations**
   Principal Organs, Key Agencies: UNESCO, UNICEF, WHO, ILO, Security Council and the need for its expansion**.**

5. **Globalization**
   Globalization: Meaning, Manifestations and Debates, India and Globalisation, Resistance to Globalisation.

6. **Challenges of Nation Building**
   Nation and Nation Building, Sardar Vallabh Bhai Patel and Integration of States, Legacy of Partition: Challenge of Refugee, Resettlement, Kashmir Issue, Nehru's Approach to Nation-Building, Political Conflicts over Language and Linguistic Organization of States.

7. **Planned Development**
   Changing nature of India's Economic Development Planning Commission and Five Year Plan, Rapid Industrialisation.

8. **India's External Relations**
   Principles of Foreign Policy; The Policy of Non Alignment, India's Changing Relations with Other Nations: US, Russia,
   China, Israel; India's Relations with its Neighbours: Pakistan, Bangladesh, Bhutan, Nepal, Sri Lanka and Myanmar; India's Nuclear Programme.

9. **Parties and Party Systems in India**
   Congress System, Bi-party System, Multi -Party Coalition System-in relation to India.

10. **Regional Aspirations**
    Rise of Regional Parties, Punjab Crisis, The Kashmir Issue, Movements for Autonomy.

ECONOMICS

Please follow the guidelines enlisted below for the project work which you have to do for the Board Examination 2025-26. Do carry out research, read extensively, explore and think 'out of the box' to make your project unique and more meaningful. The project will give you added benefit and required exposure for university admissions too. You will be
evaluated out of 20 marks for these project files and a viva. Best wishes

to all of you-Please stay healthy and be safe.

Date of Submission: 7th July 2025

Guidelines for Project Work in Economics (Class XII)
At the end of the stipulated session, each student will present the work in the Project File (with viva voice) to the External examiner.

The expectations of the project work are:
- Learners will complete only ONE project in each academic session
- Project should be of 40-45 pages
- It must include relevant pictures, graphs, diagrams etc.
- It will be an independent, self-directed piece of study
- It should be handwritten

Scope of the project:
- Student may work upon the following lines:
- Content/Index
- Acknowledgement
- Certificate

Students are supposed to pick any ONE of the following suggested projects:
1. New Education Policy (NEP) 2020: A Promise for a New Education System
2. G-20: Inclusive and Action Oriented
3. Amrit Kaal: Empowered and Inclusive Economy
4. e-Rupee (e- ₹)
5. Aatmnirbhar Bharat-The Road Ahead
6. Micro, Small and Medium Enterprises (MSME)

7. Sri Lanka's Economic Crisis
8. Environmental Crisis
9. Disinvestment policy of the government
10. Make in India – The way ahead
11. Sarva Siksha Abhiyan
12. Government Budget & its Components
13. Organic Farming – Back to the Nature
14. Currency War – reasons and repercussions
15. Monetary policy in India
16. Balance of Payment and Economic effects
17. Digital India- Step towards the future
18. Waste Management in India – Need of the hour
19. Foreign Direct Investment in India –"First Develop India"
20. Role of RBI in Control of Credit
21. Medical Tourism in India
22. Rural Credit –Analysis of Credit Facilities to Small Scale Farmers
23. Comparative Development Experiences of India with its neighbours

Following essentials are required to be fulfilled in the project:
- Cover page (Topic Name, Picture related to project, Name of the Student, Board Roll No., Academic year 2025-26)
- Introduction
- Details of the topic
- Pros and Cons of the economic event/happening.
- Major criticism related to the topic (if any)
- Students' own views/perception/ opinion and learning from the work
- Any other valid idea as per the perceived notion of the student who is actually working and presenting the Project-Work.
- Case Studies
- Bibliography

BUSINESS STUDIES

Each student has to make a project file and do the holiday homework in it. Project can be in the form of a spiral folder with an attractive cover sheet. Creativity and dedication are important aspects. It should be handwritten and 30-35 pages required.
Choose any one topic out of the following topics-

l. Project One: Elements of Business Environment. Select any one of the following elements:

1. Changes witnessed over the last few years on mode of packaging and its economic impact. The students to identify the following changes:
   a) The changes in transportation of fruits and vegetables such as cardboard crates being used in place of wooden crates, etc. Reasons for above changes.
   b) Milk being supplied in glass bottles, later in plastic bags and now in tetra-pack and through vending machines.
   c) Plastic furniture [doors and stools] gaining preference over wooden furniture.
   d) The origin of cardboard and the various stages of changes and growth.
   e) Brown paper bags packing to recycled paper bags to plastic bags and cloth bags.
   f) Reuse of packaging [bottles, jars and tins] to attract customers for their products.
   g) The concept of pyramid packaging for milk.
   h) Cost being borne by the consumer/manufacturer.
   i) Packaging used as means of advertisements.

2. The reasons behind changes in the following: Coca – Cola and Fanta in the seventies to Thumbs up and Campa Cola in the eighties to Pepsi and Coke in nineties. The teacher may guide the students to the times when India sold Coca Cola and Fanta which were being manufactured in India by the foreign companies. The students may be asked to enquire about
   a) Reasons of stopping the manufacturing of the above mentioned drinks in India THEN.
   b) The introduction of Thums up and Campa cola range.
   c) Re entry of Coke and introduction of Pepsi in the Indian market.
   d) Factors responsible for the change.
   e) Other linkages with the above
   f) Leading brands and the company having the highest market share.
   g) Different local brands venturing in the Indian market.
   h) The rating of the above brands in the market.
   i) The survival and reasons of failure in competition with the international brands.
   j) Other observations made by the students The teacher may develop the following on the above lines

3. Changing role of the women in the past 25 years relating to joint families, nuclear

families, women as a bread earner of the family, changes in the requirement trend of mixers, washing machines, micro wave and standard of living.

4. The changes in the pattern of import and export of different Products.
5. The trend in the changing interest rates and their effect on savings.
6. A study on child labour laws, its implementation and consequences.
7. The state of 'anti plastic campaign,' the law, its effects and implementation.
8. The laws of mining /setting up of industries, rules and regulations, licences required for running that business.
9. Social factors affecting acceptance and rejection of an identified product. (Dish washer, Atta maker, etc)
10. What has the effect of change in environment on the types of goods and services? The students can take examples like:
   a) Washing machines, micro waves, mixers and grinder.
   b) Need for crèche, day care centre for young and old.
   c) Ready to eat food, eating food outside, and tiffin centres.

11. Change in the man-machine ratio with technological advances resulting in change of cost structure.
12. Effect of changes in technological environment on the behaviour of employee.

II. Project Two: Principles of Management The students are required to visit any one of the following:
   1. A departmental store.
   2. An Industrial unit.
   3. A fast food outlet.
   4. Any other organisation approved by the teacher.

They are required to observe the application of the general Principles of management advocated by Fayol. Fayol's principles

   1. Division of work.
   2. Unity of command.
   3. Unity of direction.
   4. Scalar chain
   5. Espirit de corps
   6. Fair remuneration to all.
   7. Order.
   8. Equity.
   9. Discipline
   10. Subordination of individual interest to general interest.
   11. Initiative.
   12. Centralisation and decentralisation.
   13. Stability of tenure.
   14. Authority and Responsibility

OR

They may enquire into the application of scientific management techniques by F.W. Taylor in the unit visited. Scientific techniques of management.

1. Functional foremanship.
2. Standardisation and simplification of work.
3. Method study.
4. Motion Study.
5. Time Study.
6. Fatigue Study
7. Differential piece wage system

III. Project Three: Stock Exchange

The purpose of this project is to teach school students the values of investing and utilising the stock market. This project also teaches important lessons about the economy, mathematics and financial responsibility. The basis of this project is to learn about the stock market while investing a specified amount of fake money in certain stocks. Students then study the results and buy and sell as they see fit. This project will also guide the students and provide them with the supplies necessary to successfully monitor stock market trends and will teach students how to calculate profit and loss on stock. The project work will enable the students to: understand the topics like sources of business finance and capital market understand the concepts used in stock exchange inculcate the habit of watching business channels, reading business journals/newspapers and seeking information from their elders. The students are expected to:

a) Develop a brief report on History of Stock Exchanges in India. (your country)
b) Prepare a list of at least 25 companies listed on a Stock Exchange.
 c) To make an imaginary portfolio totalling a sum of Rs. 50,000 equally in any of the 5 companies of their choice listed above over a period of twenty working days. The students may be required to report the prices of the stocks on daily basis and present it diagrammatically on the graph paper. They will understand the weekly holidays and the holidays under the Negotiable Instruments Act. They will also come across with terms like closing prices, opening prices, etc.

During this period of recording, students are supposed to distinctively record the daily and starting and closing prices of the week other days under the negotiable instrument act so that they acquire knowledge about closing and opening prices. The students may conclude by identifying the causes in the fluctuations of prices.

Normally it would be related to the front page news of the a business journal, for example, Change of seasons. Festivals. Spread of epidemic. Strikes and accidents

Natural and human disasters. Political environment. Lack of faith in the government policies. Impact of changes in government policies for specific industry. International events. Contract and treaties at the international scene. Relations with the

neighbouring countries. Crisis in developed countries, etc. The students are
expected to find the value of their investments and accordingly rearrange their portfolio. The project work should cover the following aspects;

1. Graphical presentation of the share prices of different companies on different dates.
2. Change in market value of shares due to change of seasons, festivals, natural and human disasters.
3. Change in market value of shares due to change in political environment/ policies of various countries/crisis in developed countries or any other reasons.
4. Identify the top ten companies out of the 25 selected on the basis of their market value of shares. It does not matter if they have made profits or losses.

IV. Project Four: Marketing

1. Adhesives
2. Air conditioners
3. Baby diapers
4. Bathing Soap
5. Bathroom cleaner
6. Bike
7. Blanket
8. Body Spray
9. Bread
10. Breakfast cereal
11. Butter
12. Camera
13. Car
14. Cheese spreads
15. Chocolate
16. Coffee
17. Cosmetology product
18. Crayons
19. Crockery
20. Cutlery
21. Cycle
22. DTH
23. Eraser
24. E-wash

25. Fairness cream
26. Fans
27. Fruit candy
28. Furniture
29. Hair Dye
30. Hair Oil
31. Infant dress
32. Inverter
33. Jams
34. Jeans
35. Jewellery
36. Kurti
37. Ladies bag
38. Ladies footwear
39. Learning Toys
40. Lipstick
41. Microwave oven
42. Mixers
43. Mobile
44. Moisturizer
45. Music player
46. Nail polish
47. Newspaper
48. Noodles
49. Pen
50. Pen drive
51. Pencil
52. Pickles
53. Razor
54. Ready Soups
55. Refrigerator
56. RO system
57. Roasted snacks 58. Salt 59. Sarees
60. Sauces/ Ketchup
61. Shampoo
62. Shaving cream
63. Shoe polish
64. Shoes
65. Squashes
66. Suitcase/ airbag
67. Sunglasses

68. Tea
69. Tiffin Wallah
70. Toothpaste
71. Wallet
72. Washing detergent
73. Washing machine
74. Washing powder
75. Water bottle
76. Water storage tank
77. Wipes

The student must ensure that the identified product should not be items whose consumption/use is discouraged by the society and government like alcohol
products/pan masala and tobacco products, etc.

Identify one product/service from the above which the students may like to manufacture/provide [pre-assumption].

Now the students are required to make a project on the identified product/service keeping in mind the following:

1. Why have they selected this product/service?
2. Find out '5' competitive brands that exist in the market.
3. What permission and licences would be required to make the product?
4. What are your competitors Unique Selling Proposition.[U.S.P.]?
5. Does your product have any range give details?
6. What is the name of your product?
7. Enlist its features.
8. Draw the 'Label' of your product.
9. Draw a logo for your product.
10. Draft a tag line.
11. What is the selling price of your competitor's product?
(i) Selling price to consumer
(ii) Selling price to retailer
(iii) Selling price to wholesaler What is the profit margin in percentage to the
Manufacturer.
Wholesaler.
Retailer.
12. How will your product be packaged?
13. Which channel of distribution are you going to use? Give reasons for selection?
14. Decisions related to warehousing, state reasons.
15. What is going to be your selling price?
(i) To consumer
(ii) To retailer
(iii) To wholesaler
16. List 5 ways of promoting your product.
17. Any schemes for (i) The wholesaler (ii) The retailer (iii) The consumer
18. What is going to be your 'U.S.P?
19. What means of transport you will use and why?
20. Draft a social message for your label.

21. What cost effective techniques will you follow for your product.
22. What cost effective techniques will you follow for your promotion plan.

At this stage the students will realise the importance of the concept of marketing mix and the necessary decision regarding the four P's of marketing.

Product,

Place, Price,

Promotion.

On the basis of the work done by the students the project report should include the following:Type of product /service identified and the (consumer/industries) process involve there in.

1. Brand name and the product.
2. Range of the product.
3. Identification mark or logo.
4. Tagline.
5. Labeling and packaging.
6. Price of the product and basis of price fixation.
7. Selected channels of distribution and reasons thereof.
8. Decisions related to transportation and warehousing. State reasons.
9. Promotional techniques used and starting reasons for deciding the particular technique.
10. Grading and standardization. Presentation and Submission of Project Report. At the end of the stipulated term, each student will prepare and submit his/her project report.

Following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
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).

ACCOUNTANCY

PROJECT WORK - Analysis of Financial Statements and Their Impact on Corporate Decision Making
Objective - To enable students to apply theoretical concepts of accounting to real-world scenarios by analyzing the financial statements of a selected company, thereby understanding the impact of these statements on corporate decision making.

Instructions

1. **Select a Company**
   Choose any publicly traded company that interests you. This company should have readily available financial statements for the past three financial years.

2. **Research**
   Gather the following information about the company.
   - Background and history of the company.
   - Industry or sector it operates in.
   - Main competitors.

3. **Data Collection**
   Collect the Balance Sheet, Income Statement (Profit & Loss Account), and Cash Flow Statement for the last three years from either the company's official website or financial databases.

4. **Analysis**
   - Perform a vertical analysis of the Balance Sheet and Income Statement.
   - Conduct a horizontal analysis (trend analysis) of the financial statements.
   - Calculate key financial ratios related to liquidity, solvency, profitability, and market prospects.
   - Prepare a cash flow statement analysis highlighting major inflows and outflows.

5. **Interpretation and Conclusion**
   - Analyze the trends observed in the financial ratios and other analyses.
   - Discuss how these trends can affect the decision-making process in the corporate environment.
   - Provide a detailed interpretation of how the company's financial health impacts its strategic decisions.

6. **Reflection**
   - Write a reflection on what you learned during this project about accountancy as a practical field.
   - Discuss any challenges you faced and how you overcame them.

7. **Deliverables**
   Written Report- The report should be comprehensive and structured, including a cover page, index, introduction, main analysis, conclusions, bibliography, and annexures if necessary.

8. **Presentation**
   - The findings should be compiled into a well-organized written report.
   - Include charts, graphs, and tables to support your analysis.
   - Ensure proper citation of all sources.
   - Bind your project creatively. Consider a handcrafted cover, thematic decorations that reflect your business type, and a professional layout inside.
     Ensure that your name, class, section, and roll number are clearly mentioned on the front page of your file.
     Date of Submission: 7th July 2025

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COMPUTER SCIENCE

Project Work

Every student needs to prepare a project as per CBSE requirements. The aim of the project is to create something that is tangible and useful using Python file handling/ Python-SQL connectivity. The aim here is to find a real world problem that is worthwhile to solve.

Students are encouraged to visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims, then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user-friendly applications that make work easier for their users. The application must be user friendly with a clear interface that is easy to understand and visually appealing. The students must avoid plagiarism and violations of copyright issues while working on projects.

Practical File

All students must complete practical work assigned to them till Practical No 6. The record of the practical work should also be completed in the practical file.

PHYSICAL EDUCATION

PROJECT WORK - 1

Prepare the project on any one game of your choice out of Athletics, Basketball, Football, Kabaddi, Kho-Kho, Volleyball, Handball, Hockey, Cricket.

The project has to be written based on following guidelines:-
- History of the game
- Draw the diagram of court/field of related game
- Specifications of the playfield and sports equipment
- Latest general rules of the game
- Fundamental skills of the game
- Terminology
- Important tournaments of related game

PROJECT WORK - 2

Prepare a project on 10 Yogic Asanas that help in preventing lifestyle diseases- Asthma, Hypertension, Diabetes, Obesity (Write Benefits, Contraindications with pictures)