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WHERE ART MEETS TECHNOLOGY



D. GOENKA
SCHOOLS

HOLIDAY
ENGAGEMENT
2022-23

NRI City
Mainawati Marg
Kanpur

Happy Holidays!!

With an array of emotions, we enter the golden months of May and June. With summer vacations right around the corner, exhilarated souls of the young and bright minds are bursting forth with unmatched spark. With the holidays comes an opportunity to unwind and relax. However, we ought to maintain a learning continuum even during the much needed break, and to let the creative juices flow, what better than an enriching dose of Holiday Engagement!

We have been handed the gift of time, which must be judiciously used via lucrative research and project work. With special care and attention, the Holiday Engagement work for all the subjects has been drafted by the teacher-mentors in order to make the learning process enlightening, productive by breaking monotony, thereby, keeping it light. A treasure box of educational activities to be done individually to boost self confidence, along with group activities to promote collaborative learning have been designed keeping in mind the 21st century skills. Experiential learning through hands-on activities and reflection is the focal point of the tasks listed, which would relate theoretical knowledge with practical one. It aids in the promotion of other skills like Leadership, Critical thinking, Creativity, Communication, Collaboration, and Information and Media literacy preparing the students for future pursuits, giving them an edge over others.

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?’”

GENERAL INSTRUCTIONS:

*Do the assignment in your blue writing skills notebook: Write an essay! Practice Brainstorming and outlining! Length is important! Top scoring SAT 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. **‘The harder the conflict, the more glorious the triumph. What we obtain too cheap, we esteem too lightly.’ Thomas Paine**
The statement above argues that we most value that which is difficult to attain. Write an essay supporting the statement and use examples from history, literature, and popular experience to support your position.
2. **‘In crisis is cleverness born’ Chinese Proverb**
The statement above implies crisis can benefit us by fostering creativity. Do you agree? Write an essay using observations and personal experience to support your view.
3. **‘Teach us to give and not to count the cost’ Ignatius Loyola.**
Does cost always mean money? Can it be an act or a gesture or services? What’s the best gift you ever received? What’s the best gift you have given? How did giving it make you feel? Put your answers together in the form of an essay.
4. **‘Don’t look where you fall but where you slipped.’ African Proverb.**
Are there other ways of falling besides losing your balance? (Think of compromising beliefs, homework deadlines, unkept promises) and so on!
Describe some of your ‘falls’. How did you emerge as a better person? Put your views together in an essay.

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

MATHEMATICS

INVERSE TRIGONOMETRY

1) Prove that

i) $\sin^{-1} \left(\frac{1}{x} \right) = \operatorname{cosec}^{-1} x, \quad (x \geq 1 \text{ or } x \leq -1)$

ii) $\tan^{-1} \left(\frac{1}{x} \right) = \operatorname{cot}^{-1} x, \quad (x > 0)$

2) Find value of

i) $\sin^{-1} \left(\sin \frac{\pi}{3} \right)$

ii) $\cos^{-1} \left(\cos \frac{2\pi}{3} \right)$

iii) $\sin^{-1} \left(\sin \frac{2\pi}{3} \right)$

iv) $\cos^{-1} \left(\cos \left(\frac{7\pi}{6} \right) \right)$

3) Show that $\tan^{-1} \left(\tan \left(\frac{5\pi}{6} \right) \right) \neq \frac{5\pi}{6}$ and find its value.

4) Find value of

i) $\cos \left(\tan^{-1} \left(\frac{3}{4} \right) \right)$

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

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

iv) $\sin \left[2 \cos^{-1} \left(-\frac{3}{5} \right) \right]$

5) If $\cot^{-1} \left(-\frac{1}{5} \right) = \theta$, then find the value of θ .

6) Prove that $\tan^{-1} \frac{3}{4} + \tan^{-1} \frac{3}{5} - \tan^{-1} \frac{8}{19} = \frac{\pi}{4}$

7) Prove that $\tan^{-1} \frac{1}{3} + \tan^{-1} \frac{1}{5} + \tan^{-1} \frac{1}{7} + \tan^{-1} \frac{1}{8} = \frac{\pi}{4}$

8) Prove that : $2 \tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{7} = \tan^{-1} \frac{31}{17}$

9) Prove that : $\cot^{-1} 7 + \cot^{-1} 8 + \cot^{-1} 18 = \cot^{-1} 3$

10) Prove that : $\tan^{-1} \frac{1}{4} + \tan^{-1} \frac{2}{9} = \frac{1}{2} \cos^{-1} \frac{3}{5}$

MATRICES AND DETERMINANTS

Q1. Fill in the blanks-----

- (i) The number of all possible matrices of order 2×3 with each entry 1 or 2 is.....
- (ii) The number of all possible matrices of order 2×2 with each entry 1, 2 or 3 is.....
- (iii) For the matrix $A = [a_{ij}]_{2 \times 2}$, where $a_{ij} = 2^{2ix} \sin jx$, the element a_{12} is.....
- (iv) If $A = \begin{bmatrix} 0 & 0 \\ -2 & 0 \end{bmatrix}$, the matrix A^{10} is.....
- (v) If a matrix is both symmetric and skew – symmetric, then it is a matrix.

Q2. Choose the correct(✓) option: -----

(i) If the matrix $\begin{bmatrix} 0 & 6 - 5x \\ x^2 & x + 3 \end{bmatrix}$ is symmetric, the value of x is

- (a) -2,3 (b) 2,3 (c) -1,6 (d) 1,-6

(ii) If $A = \begin{bmatrix} \alpha & 0 \\ 1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$, the values of α for which $A^2 = B$ are

- (a) ± 1 (b) 4 (c) no value (d) 5

Q3. Find the values of x, y, z ; if the matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ obeys the law $A' A = I$.

Q4. If $R(\Theta) = \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$, show that $R(\phi) \cdot R(\theta) = R(\theta + \phi)$

Q5. Find the matrix X such that, $\begin{bmatrix} 2 & -1 \\ 0 & 1 \\ -2 & 4 \end{bmatrix} X = \begin{bmatrix} -1 & -8 & -10 \\ 3 & 4 & 0 \\ 10 & 20 & 10 \end{bmatrix}$.

Q6. Find x , if $[x \ 1] \begin{bmatrix} 1 & 0 \\ -2 & -3 \end{bmatrix} \begin{bmatrix} x \\ 3 \end{bmatrix} = 0$

Q7. Find a 2×2 matrix B such that $\begin{bmatrix} 2 & 5 \\ -3 & 7 \end{bmatrix} B = \begin{bmatrix} 17 & -1 \\ 47 & -13 \end{bmatrix}$.

Q8. If $A = \begin{bmatrix} 3 & 5 \end{bmatrix}$, $B = \begin{bmatrix} 7 & 3 \end{bmatrix}$, then find non-zero matrix such that $AC=BC$. Ans. $\begin{bmatrix} k \\ 2k \end{bmatrix}$, Where k is any real number.

Q9. Solve for x, y such that $x \begin{bmatrix} 2 \\ 1 \end{bmatrix} + y \begin{bmatrix} 3 \\ 5 \end{bmatrix} + \begin{bmatrix} -8 \\ -11 \end{bmatrix} = \mathbf{0}$, Ans. 1, 2 Q10. If $\begin{vmatrix} 2 & x \\ x & 2 \end{vmatrix} = 0$ then find x . Ans. ± 2

Q11. 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 , Ans. $-23/2$.

Q12. The area of a triangle with vertices $(-3, 0)$, $(3, 0)$ and $(0, k)$ is 9 sq. units then find k . Ans. 3.

Q13. Show that the points $(a+5, a-4)$, $(a-2, a+3)$ and (a, a) do not lie on a straight line.

Q14. Find maximum value of $\begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 + \sin x & 1 \\ 1 & 1 & 1 + \cos x \end{vmatrix}$, Ans. $1/2$

Q15. If A is a 3×3 matrix, $|\text{adj}A| = 16$, find $|A|$, Ans. ± 4

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

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

Q22. $4x + 2y + 3z = 9$
 $X + y + z = 1$
 $3x + y - 2z = 1$

Q23. $3x - 4y + 2z = -1$
 $2x + 3y + 5z = 7$
 $x + z = 2$

Q24. $6x - 9y - 20z = -4$
 $4x - 15y + 10z = -1$
 $2x - 3y - 5z = -1$

4/6 marks question

Q4. If $f(x) = \begin{cases} \frac{5x+|x|}{3x} & \text{if } x \neq 0 \\ 2 & \text{if } x = 0 \end{cases}$, Show that $f(x)$ is discontinuous at $x=0$.

Q5. Show that function f , defined by $f(x) = \begin{cases} 2x & \text{if } x < 2 \\ 2 & \text{if } x = 2 \\ x^2 & \text{if } x > 2 \end{cases}$, is discontinuous at $x=2$.

Q6. Find the value of k if $f(x) = \begin{cases} \frac{\sin 5x}{3x} & \text{if } x \neq 0 \\ k & \text{if } x = 0 \end{cases}$, is continuous at $x=0$. **Ans.** $5/3$

Q7. Check the continuity of $f(x) = \begin{cases} \frac{\sin x}{x} & \text{if } x < 0 \\ x+1 & \text{if } x \geq 0 \end{cases}$, **Ans.** Continuous.

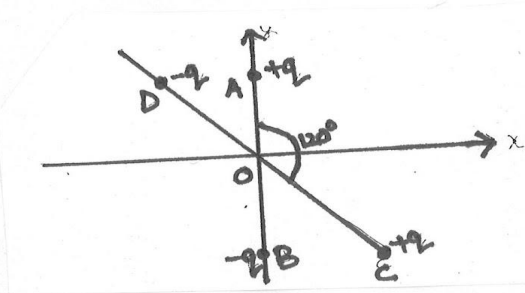
Do all the lab activities in the Maths Lab File. Lab Activities are posted in Google Classroom. There are 12 Lab Activities in total.

PHYSICS

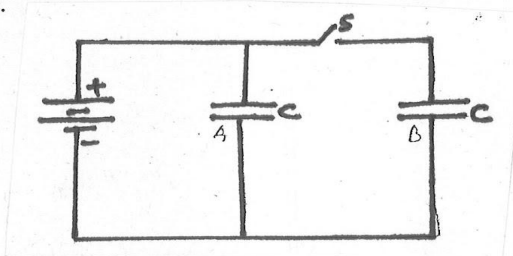
GENERAL INSTRUCTIONS:

- Prepare an investigatory project on any topic of your interest related to physics but do get it approved by your teacher. The format will be discussed in the group. This is a part of your board practical schedule.
- Complete the NCERT exercise for the third chapter.
- Complete the given worksheet.

1. If a copper wire is stretched to make it 0.1 % longer, what is the percentage change in its resistance? [Ans. 0.2 percent]
2. Two small identical electric dipoles AB and CD, each of dipole moment P are kept at an angle of 120° as shown in figure. What is the resultant dipole moment of this combination? If this system is subjected to electric field (E) directed along $+X$ direction, what will be the magnitude and direction of the torque acting on this?



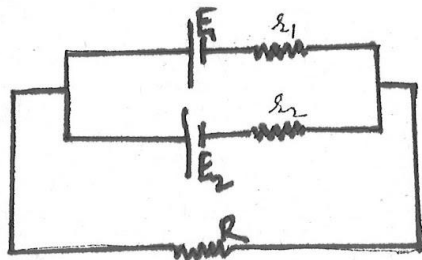
3. Figure shows two identical parallel plate capacitors connected to a battery with the switch S closed. The switch is opened and the free space between the plates of the capacitors filled with a dielectric of dielectric constant 3. Find the ratio of the total electrostatics energy stored in both capacitors before and after the introduction of the dielectric.



4. Twelve equal wires each of resistance r ohm form a cube. Find the resistance between the diagonally opposite corners. [Ans. $5/6 r\Omega$].
5. A $4 \mu\text{F}$ capacitor is charged to 200 V supply. It is then disconnected from the supply and is connected to another $2 \mu\text{F}$ uncharged capacitor. Calculate
 - (a) Common potential difference
 - (b) Amount of charge that flows to $2 \mu\text{F}$
 - (c) How much energy of first capacitor is lost in the form of heat and electromagnetic radiation. [Ans. $2.67 \times 10^{-2} \text{ J}$]

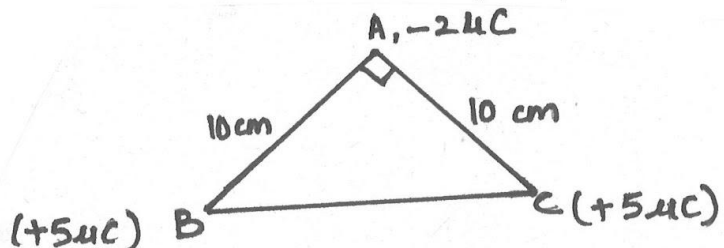
6. Find the emf and the internal resistance of a source which is equivalent to two batteries of emf's E_1 and E_2 and internal resistances r_1 and r_2 connected in parallel, as shown in Fig.

[Ans: $E = \frac{E_1 r_2 + E_2 r_1}{r_1 + r_2}$; $r = \frac{r_1 r_2}{r_1 + r_2}$]



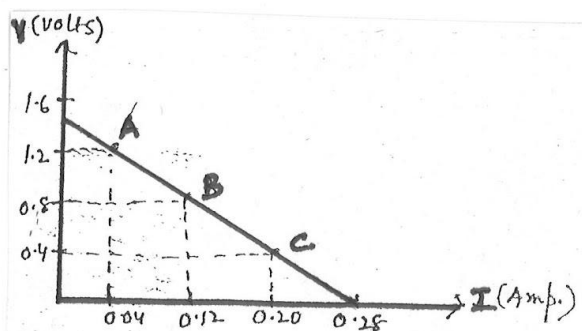
7. Three point charges are located at the corners of an isosceles triangle ABC right angled at A, as shown in figure. (i) Find the magnitude and direction of net force on the charge at C. (ii) What should be the sign and magnitude of the charge to be kept at the mid point of BC so that the charge at A remains at equilibrium.

[8.02N , 52.5° ; -3.54C]



8. Potential differences across terminals of a cell were measured (in volt) against different currents (in ampere) flowing through the cell. A graph was drawn which was a straight line ABC, as shown in figure below. Determine from the graph
 (a) emf of the cell.
 (b) maximum current obtained from the cell, and
 (c) internal resistance of the cell.

[Ans. (a) 1.4V (b) 0.28A (c) 5Ω]



CHEMISTRY

GENERAL INSTRUCTIONS:

- *One Investigatory project/ working model needs to be prepared based on the theory syllabus.*
The project should be self-explanatory housing the most innovative ideas.
The format of the project should be strictly based on CBSE format
- Complete all the experiments in the chemistry Lab Manual Work.

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 but do get it approved by your teacher. The format will be discussed in the group. This is a part of your board practical schedule.
3. The project should be hand written with a case file attached to it.
4. The given assignments to be done in the Biology notebook.

UNIT - 6: Reproduction

1. Draw the following diagrams
 - a. Kinds of Microspore tetrads in angiosperms
 - b. Structure and germination of pollen grains
 - c. L.S of Orthotropous and Anatropous ovule
 - d. Hydrophily in Vallisneria
 - e. Development of embryo in Capsella brusa

HISTORY

3. 'The sixth century BCE is often regarded as a major turning point in early Indian history.' Explain the given statement.
 4. How did Magadha emerge as the most powerful Mahajanapada? Give reasons.
 5. Analyse the role of Mahabharata as a source of history of contemporary Indian society.
 6. For any one of the travellers mentioned in the chapter 5- 'THROUGH THE EYES OF TRAVELLERS', find out more about his life and writings. Prepare a report on his travels, noting in particular how he described society, and comparing these descriptions with the excerpts included in the chapter.
 7. Read chapter 3- 'KINSHIP, CASTE AND CLASS ' and discuss the evidence that suggests that Brahmanical prescriptions about kinship and marriage were not universally followed.

 9. Examine the role of Land grants in the early centuries of the Common Era.
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POLITICAL SCIENCE

I-Do research work during the holidays for any one 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 - CIS and the 21st Century (Arab Spring).

2. New Centres of Power

Organizations: European Union, ASEAN, SAARC, BRICS. Nations: Russia, China, Israel, India, Japan and South Korea.

3. South Asia and the Contemporary World

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.

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 Plans, National Development Council, NITI Aayog.

8. India's Foreign Policy

Principles of Foreign Policy; 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.

10. Regional Aspirations

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

PSYCHOLOGY

1. BAI TEST REPORT

Prepare individual case files for testing levels of anxiety, Using bAI Test Inventory. Complete case files along with case history needs to be submitted. Case history report along with the test report and analysis needs to be maintained and attached in the file.

SSCT test file:

2. Case history file, using projective test, SSCT (Sacks sentence completion test) needs to be maintained. Test could be applied on volunteers. Case history report along with the test report and analysis needs to be maintained and attached in the file.

3. Watch any film depicting a psychological disorder/ learning disability

(Recommended movies – Karthik Calling Karthik, My Name Is Khan, Taare Zameen Par, Rain man, Beautiful Mind, As Good As It Gets, Dear Zindagi etc.).

ECONOMICS

Dear Students,

Please follow the guidelines enlisted below for the project work which you have to do for the Board Examination 2022-23. 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 you-Please stay healthy and be safe.

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.

Date of Submission: 10 July 2022

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:

Student may work upon the following lines:

- Content/Index
- Acknowledgement
- Certificate

○ Students are supposed to pick any ONE of the suggested projects.

1. **Micro and Small Scale Industries**
2. **Impact of Coronavirus Outbreak on the global economy**
3. **Aatmnirbhar Bharat-The Road Ahead**
4. **Cyber-crime and its impact on Indian Economy**
5. **Disinvestment policy of the government**
6. **Make in India - The way ahead**
7. **Sarva Siksha Abhiyan**
8. **Government Budget & its Components**
9. **Golden Quadrilateral- Cost ratio benefit**
10. **Organic Farming - Back to the Nature**
11. **Currency War - reasons and repercussions**
12. **Monetary policy in India**
13. **Balance of Payment and Economic effects**
14. **Digital India- Step towards the future**
15. **Waste Management in India - Need of the hour**
16. **Foreign Direct Investment in India -“First Develop India”**
17. **Role of RBI in Control of Credit**
18. **Medical Tourism in India**
19. **Rural Credit -Analysis of Credit Facilities to Small Scale Farmers**
20. **Impact of Information Communication Technology (ICT) on Economic Development of India**
21. **Green Revolution: Making India Self Sufficient in Food**
22. **Critical analysis of New Economic Policy in 1991**
23. **Indian Economy- Then and Now (1947-2020)**
24. **Comparative Development Experiences of India and its Neighbours**
25. **Inflation in India - reasons and repercussions**
26. **Environment and Sustainable Development**
27. **Oligopoly-cellular networks industry with emphasis on the price wars started by reliance JIO**
28. **Venezuelan crisis or Greece Economic Crisis**
29. **OPEC instability of 1979**
30. **The impact of cashless policy on the economic growth of India**
31. **Farm Bills 2020 and debate surrounding it**
32. **Start-up India and its impact**
33. **New Wage Code Bill**

Following essentials are required to be fulfilled in the project.

Cover page (Topic Name, Picture related to project, Name of the Students, Board Roll No., Academic year 2022-23)

- 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 Study
 - Bibliography
- Arrange a presentation of the project file

ENTREPRENEURSHIP

1. PROJECT WORK 1

Market survey on any consumer product based on following guidelines.

- Prepare a questionnaire with at least 12-15 relevant questions.
- Get at least 20 to 25 Questionnaires filled by respondents after dividing the population on the basis of income/Gender/Age.
- Present the data in the form of different diagrams using tally bars (bar diagrams and pie charts) based on the information gathered.
- Prepare a project summary highlighting the reasons/factors affecting consumption of the given product.

2. PROJECT WORK 2

Prepare a business plan on an **innovative** product you plan to produce as an entrepreneur. Refer to the details given in the CBSE text book, on pages 252-270

ACCOUNTANCY

Complete the Assignments uploaded on Google Classroom for the following chapters and revise them thoroughly:

Book 1- Ch-2- Fundamentals of Partnership

Ch-3- Goodwill: Nature and Valuation

Ch-4- Change in Profit-Sharing Ratio among the existing partners

PROJECT WORK

1. Comprehensive problems as done in class 11 is a part of Board Project work. It should be complete in all respects.

BUSINESS STUDIES

Students should select any **ONE** Topic for the entire year.

(I) ELEMENTS OF BUSINESS ENVIRONMENT



Students should select any one element of the following:

1. Changes witnessed over the last few years on mode of packaging and its economic impact. 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 packs 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 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 the nineties.

Students should be aware of the times when India sold Coca Cola and Fanta were being manufactured in India by the foreign companies.

The students may be asked to enquire about

- a. Reasons for 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 that are 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

Students may develop the following on the above lines

3. Changing role of women in the past 25 years relating to joint families, nuclear families, women as bread earner of the family, changes in the requirement trend of mixers, washing machines, microwave 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, licenses 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 been on the types of goods and services? The students can take examples like:
 - a. Washing machines, microwaves, 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 the technological environment on the behaviour of employees.

(II) 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 OR TAYLOR

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

They may inquire 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 rate plan.

Tips to Students

The observations could be on the basis of:

1. The different stages of division of work resulting in specialisation.
2. Following instructions and accountability of subordinates to higher authorities.
3. Visibility of order and equity in the unit.

4. Balance of authority and responsibility.
5. Communication levels and patterns in the organisation.
6. Methods and techniques followed by the organisation for unity of direction and coordination amongst all.
7. Methods of wage payments followed.
8. The arrangements of fatigue study.
9. Derivation of time study.
10. Derivation and advantages of method study.
11. Organisational chart of functional foremanship.
12. Any other identified in the organisation
13. Students are advised to pick up different areas of visit. As presentations of different areas in the Class would help in better understanding.

(III) MARKETING MANAGEMENT

Students are advised to do a simple market research with the objective of finding out a product /service whose marketing may be profitable like

- | | | |
|------------------------|---------------------|----------------------|
| i. Noodles | x. Mobile | xix. Jams |
| ii. Bathing soap | xi. Sauces/ketchup | xx. Salt |
| iii. Washing detergent | xii. Ready soups | xxi. Bread |
| iv. Washing powder | xiii. Body spray | xxii. Butter |
| v. Lipstick | xiv. Fairness cream | xxiii. Shaving cream |
| vi. Moisturizer | xv. Biscuits | xxiv. Razor |
| vii. Shoe polish | xvi. Roasted Snacks | xxv. Cheese spreads |
| viii. Shoes | xvii. Pickles | xxvi. e -Wash |
| ix. Hair dye | xviii. Squashes | xxvii. Tiffin wallah |

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 licenses 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 tagline.
11. What is the selling price of your competitor's product?
 - a. Selling price to consumer
 - b. Selling price to retailer
 - c. Selling price to wholesaler

What is the profit margin in percentage to the:

- a. Manufacturer
 - b. Wholesaler
 - c. Retailer
12. How will your product be packed?
 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?
 - a. To consumer
 - b. To retailer
 - c. To wholesaler
 16. List 5 ways of promoting your product.
 17. Any schemes for
 - a. The wholesaler
 - b. The retailer
 - c. The consumer
 18. What is going to be your 'U.S.P?
 19. What means of transport will you 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:

1. Type of product /service identified and the (consumer/industries) process involved there in.
2. Brand name and the product.
3. Range of the product.
4. Identification mark or logo.
5. Tagline.
6. Labeling and packaging.
7. Price of the product and basis of price fixation.
8. Selected channels of distribution and reasons thereof.
9. Decisions related to transportation and warehousing. State reasons.
10. Promotional techniques used and starting reasons for deciding the particular technique.
11. Grading and standardisation.

(IV) 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:

- a. understand the topics like sources of business finance and capital market
- b. understand the concepts used in stock exchange
- c. 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 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 a 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.

PRESENTATION AND SUBMISSION OF PROJECT REPORT. 10th JULY 2022

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 should be 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).
- Appendix.
- Teacher's observation.
- Signatures of the teachers.
- At the completion of the evaluation of the project, it should be punched in the centre so that the report may not be reused but is available for reference only.



INFORMATICS PRACTICES

- **TASK-1**

Research on the any one of the topics and a web page or a presentation or create a quiz using Google Form with 15 questions :

- Digital Footprints, Digital Society and Netizens
- Data Protection : IPR, Licensing and Open Source Software
- Cyber Crime: Hacking, Phishing and Ransomware
- E-Waste : Hazards & Management

- **TASK-2**

General Instructions:

- **Perform the following Python Programs**
- **Take the screenshots of the programs and their outputs**
- **Paste them in a Google doc.**

(a) Create a pandas series from a dictionary of values.

(b) Create a pandas series from an ndarray.

(c) Write a Pandas program to perform arithmetic operations on two Pandas Series.

(d) Write a Pandas program to add some data to an existing Series.

(e) Write a program to generate a series of float numbers from 41.0 to 60.0 with an increment of 2.5 each.

(f) Write a program to generate a series of 10 numbers with a scalar value of 44.

(g) Find the output of given code:

```
import pandas as pd
s=pd.Series(['a','s','r'], index=[2,6,9])
print(s>='s')
```

(h) Find the output of given code:

```
S=pd.Series([3,6,8])
print(S.index)
Index([0,1,2])
```

```
Int64Index([0, 1, 2],
dtype=Int64)
RangeIndex(start=0, stop=3, step=1) [0, 1, 2]
```

(i) Find the output of given code:

```
import pandas as pd
S1=pd.Series([1,2,3,4])
S2=pd.Series([7,8,9,10])
S2.index=['a','b','c','d']
print((S1+S2).count())
```

PAINTING (049)

GENERAL INSTRUCTIONS:

- Write the answers of the following questions in your notebook.
- The name of the work should be *Holidays_Task_2022-23*
- Complete all the questions.
- Choose any medium for practicals.

Theory :

1. Write an essay on the origin and development of the Rajasthani or Pahari School of Miniature Paintings.
2. Why do you like Rajasthan or Pahari School of Miniature Paintings. Justify your answer with a suitable example.
3. Explain the colour scheme of any painting belongs to Rajasthani or Pahari School of Miniature Paintings.

Practical :

Do any five paintings on the following topics in your art file/canvas.

1. Nature study
 2. Figurative compositions
 3. Still life
 4. Experiment with textures
-

PHYSICAL EDUCATION

(In Practical Manual)

PROJECT WORK - 1

Prepare the project on any one game of your choice out of 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 Yogic Asanas that help in preventing lifestyle diseases- Asthma, Hypertension, Diabetes, Obesity (Write Benefits, Contraindications with pictures)

Any two Asana for each lifestyle disease.