G. D. GOENKA PUBLIC SCHOOL, MAINAWATI MARG, KANPUR

G. GOENKA SCHOOLS

2024

HOLIDAY
Engagement

CLASS XII

From The Principal's Desk

Dear Students,

As the warm embrace of summer envelops us, let us pause and reflect upon the words of Helen Keller: "Life is either a daring adventure or nothing at all." Indeed, if life were devoid of challenges and uncertainties, it would lose its essence, its purpose, much like a ship adrift in calm waters.

The balmy months of May and June offer us an opportunity for self-reflection, a time to rejuvenate our spirits and nourish our minds. Amidst the tranquil respite, we find opportunities for familial bonds to flourish, for ventures into unexplored realms, for passions to be pursued and dreams to be realized.

It is said that an umbrella, a book, and the mind only serve their purpose when open! Let us heed these words and embrace the boundless possibilities that lie before us. Let our minds unfurl like the petals of a blooming flower, eager to absorb the wisdom and experiences that await us in the coming days.

The Summer Holiday Engagement of 2024 beckons with a unique purpose—a purpose to embark on a journey to elevate Social Emotional and Experiential Learning, as well as foster Financial Literacy! Let us immerse ourselves in delightful and enlightening endeavours to equip our youngsters with invaluable financial acumen and nurture empathy. Each challenge, each endeavour, will be a stepping stone towards personal growth and enlightenment.

As we engage ourselves in these activities, let us not forget the joy of learning, the thrill of exploration, and the warmth of companionship. Let us involve our families, for in their support and guidance, we find strength and inspiration.

I hold in high regard the creativity and individual strengths of each and every one of you. Your efforts, your contributions, are invaluable in shaping our collective journey.

Hope this Goenkan initiative of the Summer Holiday Engagement 2024-25 is a testament to our capacity for growth and is replete with learning and laughter.

Let us redefine who we are and embrace the spirit of collaboration, innovation, and compassion.

M. Dutta

Contents

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 blue writing skills 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. 'The destiny of a Nation is shaped in its classroom ! '
   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. A great work of fiction can allow us to see the truths that may be hidden from us in real life. A good example of the ability of fiction to teach important truths is _____.
   Complete the sentence with a fictional work from literature, films or television and write an essay demonstrating how that story taught an important truth.

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

Q1.Fill in the blanks-----------

(i)The number of all possible matrices of order 2 x 3 with each entry 1 or 2 is……………

(ii) The number of all possible matrices of order 2 x 2 with each entry 1,2 or 3 is……………

(iii) For the matrix $A = [a_{ij}]_{2x2}$, 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($\sqrt{}$) 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 $R(\phi). R(\theta) = R(\theta + \phi)$

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 $[x \quad 1]\begin{bmatrix} 1 & 0 \\ -2 & -3 \end{bmatrix}\begin{bmatrix} x \\ 3 \end{bmatrix} = O$

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

Q8. If A= [3 5], B= [7 3], 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 $x\begin{bmatrix} 2 \\ 1 \end{bmatrix} + y\begin{bmatrix} 3 \\ 5 \end{bmatrix} + \begin{bmatrix} -8 \\ -11 \end{bmatrix} = 0$, Ans. 1,2   Q10. If $\begin{vmatrix} 2 & x \\ x & 2 \end{vmatrix} = 0$ then find x. Ans. ±2

Q11. If $[2x \quad 3]\begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix}\begin{bmatrix} x \\ 8 \end{bmatrix} = 0$, find the value of x, Ans.-23/2.

Q12. The area of a triangle with vertices(-3,0),(3,( )and (0,k)is 9sq. 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 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 3x3 matrix, |adjA|=16, find |A|, Ans. ±4

Q16.   5x+2y = 4   Q17.   3x + 4y − 5 = 0   Q18.   3x − 2y + 3z = 8
       7x+3y = 5   x − y + 3 = 0   2x + y − z = 1
                                                           4x − 3y + 2z = 4

Q19.   x − y + z = -1   Q20.   x + y + z = 4   Q21.   4x + 2y + 3z = 5
       2x + y − z = 2   2x − y + z = -1   x - 2y + z = -4
       x − 2y-z = 4   2x + y − 3 = -9   3x - y − 2z = 3

Q22.   4x + 2y + 3z =9   Q23.   3x − 4y + 2z = -1   Q24.   6x − 9y − 20z = -4
       X + y + z = 1   2x + 3y + 5z = 7   4x − 15y + 10z = -1
       3x + y − 2z = 1   x + z = 2   2x − 3y − 5z = -1

CONTINUITY AND DIFFERENTIABILITY

Q1. 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) $y = x^x$

(xi) $y = \sin^{-1}\left(2x\sqrt{1-x^2}\right)$ (xii) $y = 2^{\cos^2 x}$ (xiii) $y = \cos(\tan\sqrt{x+1})$ (xiv) $y = \sin\sqrt{x} + \cos^2\sqrt{x}$

(xv) $y = \sin^n(ax^2 + bx + c)$ (xvi) $y = \log[\log(\log x^5)]$ (xvii) . $y = \sin x^2 + \sin^2 x + \sin^2(x^2)$

Q2. Discuss the differentiability of f(x) =|x| $\forall x \in \Re$. **Ans.** Not differentiable at x=0.

Q3. Discuss the differentiability of f(x) =[x] , where [x] is greatest integer function ,at x=2 and 5/2.

Q4. 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.

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

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

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

Q8. 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) $y = (\log x)^x + x^{\log x}$

(viii) $y = \log\left(\dfrac{x + \sqrt{x^2 + a^2}}{x - \sqrt{x^2 - a^2}}\right)$ (ix) $y = \tan^{-1}\left(\dfrac{\sqrt{1 + x^2} - \sqrt{1 - x^2}}{\sqrt{1 + x^2} + \sqrt{1 - x^2}}\right)$ (x) $y = \left(x^x\right)^x$

Do first five lab activities in the Maths Lab File. Lab Activities are posted in Google Classroom.

*NOTE: Date of Submission: By the first week of July and will be marked as part of internal assessment.

PHYSICS

INVESTIGATORY PROJECT

- As per the instructions given in class, each child has to prepare one investigatory project.
- NCERT Chapter end exercise to be completed for chapter 3 (current electricity)

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.
- Complete All the questions from NCERT from Chapter alcohols ,phenols and ethers & the work sheet shared in the class group.

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.*

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
(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

Please note-Above given assignment to be done in your History registers and submitted in the first week of July.

1. **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-

(Project work Topics)

1. 'Rihla'-A remarkable Book
2. Major Bhakti movement of Medieval India and their social implications
3. Vijaynagar empire -Amara Nayaka system
4. Colonialism and the countryside - Santhal revolt
5. Rebel and Raj-Extent to which religious beliefs shaped the events of 1857.
6. Gandhi and national movement- How did Mahatma Gandhi shape Nationalism in India?

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.

II- Answer the following questions in your register.Please bear in mind the marks allotted and accordingly the word limit.Remember to answer in points and to underline the key words in every point.Do research if required to substantiate your answers.

Q1) Mention any two features that distinguish the Soviet economy from that of a capitalist country like the US.(2)

Q2)How does geographical proximity influence the formation of regional organisations?(2)

Q3) In what ways does the present Chinese economy differ from its command economy?(4)

Q4) The emerging economies of China and India have great potential to challenge the unipolar world.Do you agree with the statement? Substantiate your arguments.(4)

Q5) How are the external powers influencing bilateral relations in South Asia? Take any one example to illustrate your point.(6)

III-Do research on any two National Political Parties and two State Political Parties of India, basing the research on the given headings:

Name of the Political Party:

Symbol:

Ideology:

Prominent Leaders:

Please do this activity in your register.

SOCIOLOGY

1. Do the report on the Research visit, held on May 22, '24.

2. Complete and compile the data collected from the same. And write the research as instructed.

3. Revise the first two chapters and do the PYQs and assignments given in class.

PSYCHOLOGY

1. CASE STUDY FILE

Case study is an in-depth analysis of a person. You are required to choose a person on whom you want to do your case study. The person should be 16-18 years of age and willing to cooperate with you.

TOPICS TO BE COVERED IN FILE WORK

● Introduction
● Methods used for psychological assessment
● Problems faced during adolescence
● Psychological tools
● Case history
● Physical health
● Non participant observation
● Interviews – with mother, sibling, teachers, best friend and with the subject

2. PRACTICAL FILE

Complete writing the following in the practical file
a. BAI
b. BDI
c. Maudsley's Personality INVENTORY (MPI)

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 2024-25. 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.

<u>Date of Submission:</u> 5th July 2024

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

<u>The expectations of the project work are:</u>
- 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

<u>Scope of the project:</u>
- 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

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 2024-25)
- 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 the presentation of the project file.

BUSINESS STUDIES

Each student has to make a project file and do the holiday homework in it. Project can bein 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.

I. *Project One: 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

Any more as suggested by the teacher.

The teacher 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/servicekeeping 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 theManufacturer.
☐ Wholesale
☐ r.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:
1. Type of product /service identified and the (consumer/industries) process involve 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 standardization.

I. **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

ACCOUNTANCY

1. Complete the Assignments uploaded on Google Classroom for the following chapters and revise them thoroughly:
   Book 1-
   Ch-1- Fundamentals of Partnership
   Ch-2- Goodwill:Nature and Valuation
   Ch-3- Change in Profit-Sharing Ratio among the existing partners
   Book 3-
   Ch-2- Analysis of Financial Statements of a Co.

2. LEARNING WORK
   BOOK-3-Ch-1 Study the Financial Statement of a company. Learn Headings and Sub- Headings of Balance Sheet and Statement of Profit and Loss.

3. Take. A Financial statement of. A company (balance sheet) prepare
   - Cash flow statement
   - All the ratios

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

INFORMATICS PRACTICES

- *TASK-1*

  Research on the any one of the topics and create a web page or a presentation or 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

  (Suggested software - Adobe Express, Canva, Google Slides, Google Forms)

- *TASK-2*

  CBSE Project Work

  The student has to identify a real-world problem by exploring the environment. e.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.

  Collect the data and store it in a csv or a database file. Analyze using Python libraries and generate appropriate charts to visualize. Use Python libraries to develop software for the school or any other social good.

  Avoid plagiarism while working on projects. Any resources (data, image etc.) used in the project must be suitably referenced.

PAINTING

"Art is the thing which comes from the mind of man through his hand to the tip of the brush on a canvas". *Let's go and create your own wings with imagination and fly high with it. Create your own world and do some exciting work.......*

<u>Theory</u> : Research work on Indian Miniature Painting.

1. Write an essay on the origin and development of the Rajasthani, Pahari, Mughal and Deccan 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 compositional arrangement of any four paintings belonging to Rajasthani or Pahari School of Miniature Paintings.

<u>Practical</u> :

1. One canvas painting size 30"×30" or 30"x40" can use the style of your favorite artist.
2. Five paintings on the theme of 'Nature, Still life, Figurative compositions and Landscapes' Size should be half imperial.

- Research work on any Indian contemporary artist. Choose any five or six his/her work and create your own composition. (Size half imperial)
- One canvas painting size 30"×30" can use the style of Vincent Vangogh.

<u>GENERAL INSTRUCTIONS</u>:

- Write the answers of the following questions in your notebook.
- The name of the work should be Holidays Engagement_2024-25
- Complete all the questions.
- Choose any medium for practicals.

PHYSICAL EDUCATION

Holiday Home work

Practical Note Book

*Procedure for Asana, Benefits and Contraindication for any two Asanas for each lifestyle disease

(Obesity, Diabetes, Asthma, Hypertension, Back Pain and Arthritis)

For Example-

1. Obesity- short note

2. Two Asanas (with photo or diagram)- Procedure, Benefits and contraindication.

MUSIC

Make an assignment on the following topics -
1) Detailed information about any one gharana
2) Biography on any one famous classical musician

11.2 Nomenclature

VSA **(1 mark)**

1. Write the IUPAC name of the following :

$$CH_3-\underset{\underset{H_5C_2}{|}}{\overset{\overset{CH_3}{|}}{C}}-\underset{\underset{OH}{|}}{CH}-CH_3$$
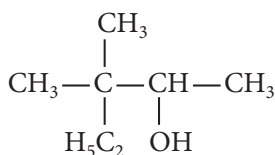
(2018)

2. Write the IUPAC name of the following compound :

$$H_3C-\underset{\underset{H_3C}{|}}{C}=\underset{\underset{Br}{|}}{C}-CH_2-OH$$
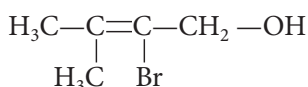
(AI 2017, AI 2012C)

3. Write the IUPAC name of the following compound :

—CH=CH—CH$_2$OH
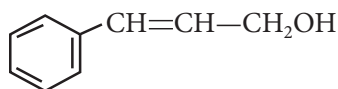
(AI 2017)

4. Write the IUPAC name of the following compound :

$$CH_3-O-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_3$$
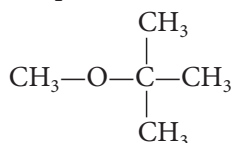
(AI 2017)

5. Write the IUPAC name of the given compound.

CH$_2$—CH$_2$—OH
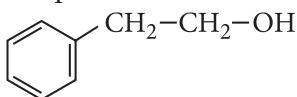
(AI 2016)

6. Write the IUPAC name of the given compound :

O$_2$N OH
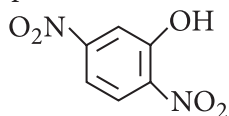
NO$_2$ *(Delhi 2015)*

7. Write the IUPAC name of the given compound :

$$CH_2=\underset{\underset{CH_3}{|}}{C}-CH_2-OH$$
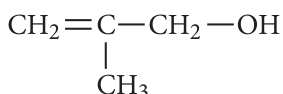
(AI 2015)

8. Write the IUPAC name of the given compound:

$$HO-CH_2-CH=\underset{\underset{CH_3}{|}}{C}-CH_3$$
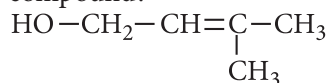
(Foreign 2015)

9. Name the following according to IUPAC system :

$$CH_3-\underset{\underset{OH}{|}}{CH}-CH_2-CH_3$$

(1/2, Delhi 2015C)

10. Write IUPAC name of the following compound :

$$HO-CH_2-\underset{\underset{OH}{|}}{CH}-CH_2-OH$$
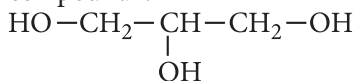
(Foreign 2014)

11. Draw the structural formula of 2-Methylpropan-2-ol molecule. *(Delhi 2012)*

12. Draw the structure of hex-1-en-3-ol compound. *(Delhi 2012)*

13. Write IUPAC name of the following :

NO$_2$

 OC$_2$H$_5$
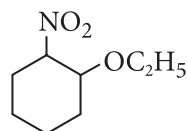
(1/3, AI 2012C)

11.3 Structures of Functional Groups

VSA **(1 mark)**

14. **Assertion (A) :** The C—O—H bond angle in alcohols is slightly less than the tetrahedral angle.

Reason (R) : This is due to the repulsive interaction between the two lone electron pairs on oxygen.

(a) Both Assertion (A) and Reason (R) are correct statements, and Reason (R) is the correct explanation of the Assertion (A).

(b) Both Assertion (A) and Reason (R) are correct statements, but Reason (R) is not the correct explanation of the Assertion (A).

(c) Assertion (A) is correct, but Reason (R) is incorrect statement.

(d) Assertion (A) is incorrect, but Reason (R) is correct statement. *(2020)*

15. The C—O bond is much shorter in phenol than in ethanol. Give reason. *(Delhi 2012C)*
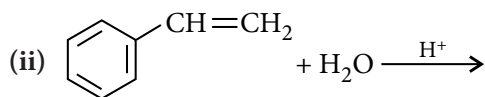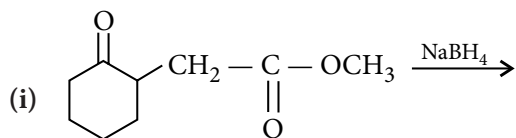
11.4 Alcohols and Phenols

16. Carry out the following conversion :
Phenol to salicylaldehyde *(1/5, 2020)*

17. Carry out the following conversion :
Propene to propanol *(1/5, 2020)*

18. Predict the reagent for carrying out the following conversion :
Phenol to benzoquinone *(1/5, 2020)*

19. Predict the reagent for carrying out the following conversion :
Phenol to 2,4,6-tribromophenol *(1/5, 2020)*

20. Write the preparation of phenol from cumene. *(1/3, 2020)*

21. How can you convert the following :
Phenol to chlorobenzene. *(1/3, 2020)*

22. How can you convert the following :
Sodium phenoxide to *o*-hydroxybenzoic acid. *(1/3, 2020)*

23. How can you convert the following?
Ethanol to propanenitrile *(1/3, 2020)*

24. Write the equation involved in the following reaction : Kolbe's reaction
(1/2, AI 2019, Delhi 2014C, 2013C)

25. Give reason for the following :
Phenol is more acidic than ethanol.
(1/3, AI 2017C, 2015)

26. Write the equation involved in the acetylation of salicylic acid. *(Delhi 2015)*

27. Which of the following isomers is more volatile :
o-nitrophenol or *p*-nitrophenol?
(Delhi 2014)

28. Write the equation involved in the following reaction :
Reimer –Tiemann reaction.
(1/2, AI 2014, 2013)

29. How is toluene obtained from phenol?
(1/3, Delhi 2013C)

30. Give a chemical test to distinguish between 2-pentanol and 3-pentanol.
(1/2, Delhi 2013C)

31. Of the two hydroxy organic compounds ROH and $R'OH$, the first one is basic and other is acidic in behaviour. How is R different from R'? *(Delhi 2013C)*

32. How would you obtain ethane-1, 2-diol from ethanol ? *(AI 2013C)*

33. How would you obtain acetophenone from phenol? *(AI 2013C)*

34. *Ortho*-nitrophenol has lower boiling point than *p*-nitrophenol. Why? *(Delhi 2012C)*

35. Give a chemical test to distinguish between benzoic acid and phenol. *(Delhi 2012C)*

36. Illustrate the following name reaction
Reimer-Tiemann Reaction. *(Delhi 2012C)*

37. Give a chemical test to distinguish between 2-propanol and 2-methyl-2-propanol.
(Delhi 2012C)

38. *Ortho*-nitrophenol is more acidic than *ortho*-methoxyphenol. Why? *(1/2, Delhi 2012C)*

39. Give the structure and IUPAC name of the product formed when propanone is reacted with methylmagnesium bromide followed by hydrolysis. *(AI 2012C)*

40. Explain the following giving one example :
Reimer-Tiemann reaction. *(1/3, Delhi 2011)*

41. How would you convert ethanol to ethene?
(AI 2011)

42. Out of *t*-butyl alcohol and *n*-butanol, which one will undergo acid catalysed dehydration faster and why? *(2/5, 2020)*

43. Give the mechanism for the formation of ethanol from ethene. *(2/5, 2020)*

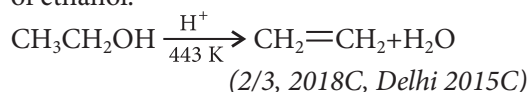44. Write the major product(s) of the following reactions :

(i)

(ii) $(CH_3)_3COH \xrightarrow[573\ K]{Cu}$ *(2/3, 2020)*
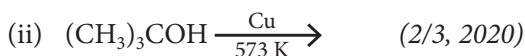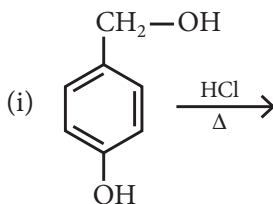
45. Write the structures of the main products in the following reactions :

(i)

$$\text{(cyclohexanone ring)}-CH_2-\overset{\underset{\displaystyle O}{\|}}{C}-OCH_3 \xrightarrow{NaBH_4}$$

(ii)

$$C_6H_5-CH=CH_2 + H_2O \xrightarrow{H^+}$$

(2/3, 2018)

46. Explain the mechanism of dehydration steps of ethanol.

$$CH_3CH_2OH \xrightarrow[443\ K]{H^+} CH_2=CH_2+H_2O$$

(2/3, 2018C, Delhi 2015C)

47. Write the product(s) in the following reactions :

(i)

$$\text{(phenol with)}\ OH,\ COOH \xrightarrow[H^+]{(CH_3CO)_2O} ?$$

(ii) $CH_3-CH=CH-CH_2-OH \xrightarrow{PCC} ?$
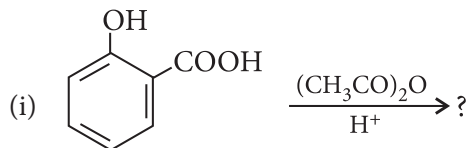
(2/5, Delhi 2017)

48. Give simple chemical tests to distinguish between the following pairs of compounds :
(i) Ethanol and phenol
(ii) Propanol and 2-methylpropan-2-ol.

(2/5, Delhi 2017)

49. (a) Arrange the following compounds in the increasing order of their acid strength :
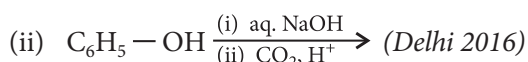p-cresol, p-nitrophenol, phenol
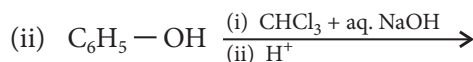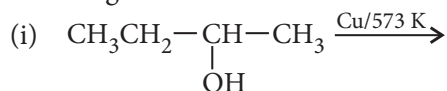(b) Write the mechanism (using curved arrow notation) of the following reaction :

$$CH_2=CH_2 \xrightarrow{H_3O^+} CH_3-CH_2^+ + H_2O$$
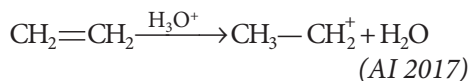
(AI 2017)

50. Write the structure of the products when Butan-2-ol reacts with the following :
(a) CrO_3 \qquad (b) $SOCl_2$ *(AI 2017)*

51. Write the main product(s) in each of the following reactions :

(i) $CH_3-CH=CH_2 \xrightarrow[\text{(ii)}\ 3H_2O_2/OH^-]{\text{(i)}\ B_2H_6}$

(ii) $C_6H_5-OH \xrightarrow[\text{(ii)}\ CO_2,\ H^+]{\text{(i)}\ aq.\ NaOH}$ *(Delhi 2016)*

52. Write the final product(s) in each of the following reactions :

(i) $CH_3CH_2-\underset{\underset{\displaystyle OH}{|}}{C}H-CH_3 \xrightarrow{Cu/573\ K}$

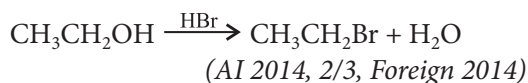**(ii)** $C_6H_5-OH \xrightarrow[\text{(ii)}\ H^+]{\text{(i)}\ CHCl_3 + aq.\ NaOH}$

(Delhi 2016)

53. How are the following conversions carried out?
(i) Propene to propane-2-ol
(ii) Benzyl chloride to Benzyl alcohol

(2/3, Delhi 2015C)

54. Write the mechanism of acid dehydration of ethanol to yield ethene. *(AI 2015C)*

55. Write the mechanism of the following reaction :

$$CH_3CH_2OH \xrightarrow{HBr} CH_3CH_2Br + H_2O$$

(AI 2014, 2/3, Foreign 2014)

56. Name the reagents used in the following reactions :
(i) Bromination of phenol to 2, 4, 6-tribromophenol
(ii) Butan-2-one to Butan-2-ol
(iii) Friedel–Crafts alkylation of anisole
(iv) Oxidation of primary alcohol to carboxylic acid *(Foreign 2014)*

57. Name the different reagents needed to perform the following reactions :
(i) Phenol to Benzene
(ii) Dehydration of propan-2-ol to propene
(iii) Friedel-Crafts alkylation of anisole
(iv) Dehydrogenation of ethanol to ethanal

(Foreign 2014)

58. How are the following conversions carried out?
(i) Propene to Propan-2-ol
(ii) Ethyl chloride to Ethanal *(Delhi 2014C)*

59. Explain the following with an example for each :
(i) Kolbe's reaction,
(ii) Reimer-Tiemann reaction

(2/3, AI 2014C)

60. How will you convert :
(i) Propene to propan-2-ol,
(ii) Phenol to 2,4,6-trinitrophenol?

(Delhi 2013)

61. How will you convert the following :
(i) Propan-2-ol to propanone
(ii) Phenol to 2,4,6-tribromophenol. *(Delhi 2013)*

62. Explain the mechanism of the following reaction :

$$CH_3—CH_2—OH \xrightarrow[443\ K]{H^+} CH_2\!=\!\!CH_2 + H_2O$$
(AI 2013)

63. Explain the mechanism of acid catalysed hydration of an alkene to form corresponding alcohol. *(AI 2012)*

64. Explain the following behaviours :
(i) Alcohols are more soluble in water than the hydrocarbons of comparable molecular masses.
(ii) *Ortho*-nitrophenol is more acidic than *ortho*-methoxyphenol. *(AI 2012)*

65. Give a separate chemical test to distinguish between the following pairs of compounds :
(i) Ethanol and Phenol
(ii) 2-Pentanol and 3-Pentanol *(Delhi 2012C)*

66. How would you obtain the following :
(i) 2-methylpentan-2-ol from 2-methyl-1-pentene
(ii) Acetophenone from phenol. *(2/3, AI 2012C)*

67. How would you obtain
(i) Picric acid (2, 4, 6-trinitrophenol) from phenol.
(ii) 2-Methylpropene from 2-methylpropanol? *(Delhi 2011)*

68. How would you obtain the following :
(i) Benzoquinone from phenol
(ii) 2-Methylpropan-2-ol from methyl magnesium bromide? *(AI 2011)*

69. Give the names of the reagents of bringing about the following transformations :
(i) Hexan-1-ol to hexanal
(ii) But-2-ene to ethanol *(Delhi 2011C)*

70. Account for the following :
(i) Propanol has higher boiling point than butane.
(ii) *Ortho*-nitrophenol is more acidic than *ortho*-methoxyphenol. *(2/3, Delhi 2011C)*

71. Account for the following :
(i) The boiling point of ethanol is higher than that of methanol.
(ii) Phenol is a stronger acid than an alcohol. *(Delhi 2011C)*

**72.** Write Reimer–Tiemann reaction giving an example. *(AI 2011C)*

LA I (3 marks)

73. Write the product(s) of the following reactions :

(i)

$\xrightarrow{PCC}$

(ii)

$\xrightarrow[CH_3COOH]{(CH_3CO)_2O}$

(iii)

$+ CH_3MgBr \xrightarrow{H_3O^+}$ *(2020)*
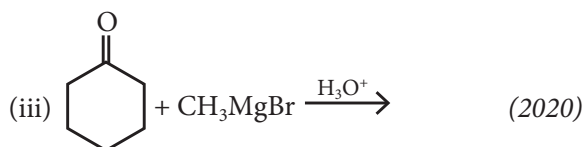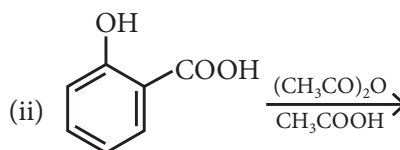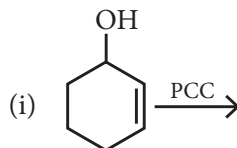
74. (a) Show how will you synthesise the following alcohol prepared by the reaction of a suitable Grignard reagent on methanal?

$$CH_3— \underset{\underset{CH_3}{|}}{CH} — CH_2—OH$$

(b) Write the mechanism of the following reaction :

$$CH_2\!=\!\!CH_2 + H_2O \xrightarrow{H^+} CH_3CH_2OH$$
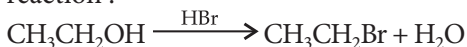*(AI 2019)*
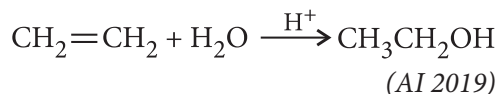
75. How do you convert the following?
(i) Phenol to anisole
(ii) Propan-2-ol to 2-methylpropan-2-ol
(iii) Aniline to phenol *(Delhi 2015)*

76. Predict the products of the following reactions:

(i) $CH_3—CH\!=\!CH_2 \xrightarrow[\text{(ii) } 3H_2O_2/OH^-]{\text{(i) } B_2H_6}$?

(ii) $C_6H_5OH \xrightarrow{Br_2(aq)}$?

(iii) $CH_3CH_2OH \xrightarrow{Cu/573\ K}$? *(Foreign 2015)*

77. How are the following conversions carried out?

(i) Benzyl chloride to benzyl alcohol
(ii) Ethyl magnesium chloride to propan-1-ol
(iii) Propene to propan-2-ol.

(AI 2015C, 2014C)

78. (a) Write the mechanism of the following reaction :
$$CH_3CH_2OH \xrightarrow{HBr} CH_3CH_2Br + H_2O$$
(b) Write the equation involved in Reimer–Tiemann reaction. *(Delhi 2014)*

79 (a) Give chemical tests to distinguish between the following pairs of compounds :
(i) Pentan-2-ol and Pentan-3-ol
(ii) Methanol and Phenol
(b) *o*-Nitrophenol is more acidic than *o*-methoxyphenol. Explain why.

(AI 2013C)

80. Draw the structure and name of the product formed if the following alcohols are oxidized. Assume that an excess of oxidising agent is used.
(i) $CH_3CH_2CH_2CH_2OH$
(ii) 2-butenol
(iii) 2-methyl-1-propanol *(Delhi 2012)*

81. (a) Describe the mechanism of hydration of ethene to yield ethanol.
(b) Write Kolbe's reaction with an example.

(AI 2011C)

82. Acid catalysed dehydration of *tert*-butanol is faster than that of *n*-butanol. Explain.
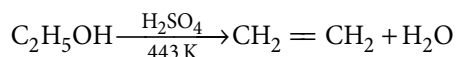
(AI 2011C)

LA II **(5 marks)**

83. (a) How do you convert the following :
(i) Phenol to Anisole
(ii) Ethanol to Propan-2-ol
(b) Write mechanism of the following reaction :
$$C_2H_5OH \xrightarrow[443\,K]{H_2SO_4} CH_2 = CH_2 + H_2O$$
(c) Why phenol undergoes electrophilic substitution more easily than benzene?

(Delhi 2019)

84. (a) Account for the following :
(i) *o*-nitrophenol is more steam volatile than *p*-nitrophenol.
(ii) *t*-butyl chloride on heating with sodium methoxide gives 2-methyl-propene instead of *t*-butylmethylether.
(b) Write the reaction involved in the following :

(i) Reimer—Tiemann reaction
(ii) Friedal—Crafts alkylation of phenol
(c) Give simple chemical test to distinguish between ethanol and phenol.

(Delhi 2019)

85. (a) Write the formula of reagents used in the following reactions :
(i) Bromination of phenol to 2,4,6- tribromophenol
(ii) Hydroboration of propene and then oxidation to propanol.
(b) Arrange the following compound groups in the increasing order of their property indicated :
(i) *p*-nitrophenol, ethanol, phenol (acidic character)
(ii) propanol, propane, propanal (boiling point)
(c) Write the mechanism (using curved arrow notation) of the following reaction:

$$CH_3 - CH_2 - \overset{+}{O}H_2 \xrightarrow{CH_3CH_2OH}$$
$$CH_3 - CH_2 - \underset{\underset{H}{|}}{\overset{+}{O}} - CH_2 - CH_3 + H_2O$$
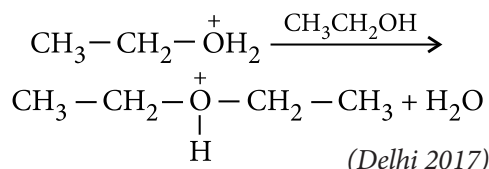
(Delhi 2017)

11.6 Ethers

VSA **(1 mark)**

86. **Assertion (A) :** $(CH_3)_3C—O—CH_3$ gives $(CH_3)_3 C—I$ and CH_3OH on treatment with HI.
Reason (R) : The reaction occurs by S_N1 mechanism.
(a) Both Assertion (A) and Reason (R) are correct statements, and Reason (R) is the correct explanation of the Assertion (A).
(b) Both Assertion (A) and Reason (R) are correct statements, but Reason (R) is not the correct explanation of the Assertion (A).
(c) Assertion (A) is correct, but Reason (R) is incorrect statement.
(d) Assertion (A) is incorrect, but Reason (R) is correct statement. *(2020)*

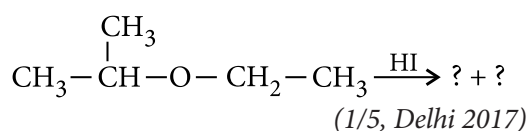87. Carry out the following conversion :

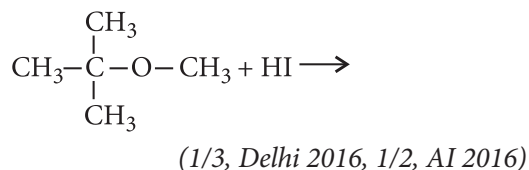*t*-Butyl chloride to *t*-butyl ethyl ether

(1/3, 2020)

88. Predict the reagent for carrying out the following conversions :

Anisole to *p*-bromoanisole *(1/3, 2020)*

89. Write the equation for the preparation of 2-methyl-2-methoxypropane by Williamson synthesis. *(1/3, 2020)*

90. Write the equations involved in the following reaction :

Friedel—Crafts alkylation of anisole.
(1/2, AI 2019, 1/3, Delhi 2011)

91. Write the structure of the main products in the following reaction :

$$OC_2H_5$$

+ HI $\longrightarrow$
(1/3, 2018)
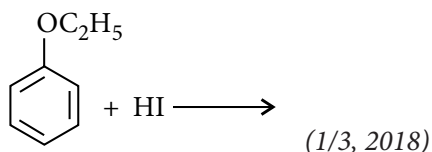
92. Write the product in the following reaction :

$$CH_3-\overset{\overset{\displaystyle CH_3}{|}}{CH}-O-CH_2-CH_3 \xrightarrow{HI} ? + ?$$
(1/5, Delhi 2017)

93. Write the main product(s) in the following reaction :

$$CH_3-\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}}-O-CH_3 + HI \longrightarrow$$
(1/3, Delhi 2016, 1/2, AI 2016)

94. How is the following conversion carried out? Anisole to *p*-bromoanisole *(1/3, Delhi 2015C)*

95. Write the equation involved in the following reaction :

Williamson synthesis
(1/2, AI 2014, 2013, Delhi 2014C
1/3, AI 2014C, Delhi 2012C)

96. Account for the following :

Preparation of ethers by acid dehydration of secondary or tertiary alcohols is not a suitable method. *(1/3, Delhi 2011C)*

97. Account for the following :

The boiling points of ethers are lower than isomeric alcohols. *(1/3, AI 2011C)*

SA **(2 marks)**

98. Write the mechanism of the following reaction :

$$2CH_3CH_2OH \xrightarrow[413\ K]{H^+} CH_3CH_2OCH_2CH_3$$
$$+ H_2O$$
(2/3, 2020, 2/3, AI 2017, Delhi 2016,
2015, 2013, 2013C)

99. Give reasons for the following :
   (i) Boiling point of ethanol is higher in comparison to methoxymethane.
   (ii) $(CH_3)_3C—O—CH_3$ on reaction with HI gives CH_3OH and $(CH_3)_3C—I$ as the main products and not $(CH_3)_3C—OH$ and CH_3I. *(2/3, AI 2015)*