KENDRIYA VIDYALAYA **chero salempur**
AUTUMN BREAK HOME WORK
CLASS -8
SUBJECT- SOCIAL SCIENCE

1.complete notebook.
2.Complete exercise of chapter- Civilising the Native, Educating the Nation.
3.Read and Prepare notes on topics- Women, Caste and Reforms.
3.Map Work- Locate and label on the outline map of India–
    A.   important places of Revolt 1857
    B. Location of major industries
4.MDP-

AUTUMN BREAK HOMEWORK

MUSIC

कक्षा 1 व 2

① विद्यालय प्रार्थना-गीत को शुद्ध उच्चारण के साथ याद करना व सस्वर गायन करना ।

② राष्ट्रगान (जनगण मन ---) को शुद्धता के साथ याद करना ।

कक्षा - 3

① स्वशन सांग (केन्द्रीय विद्यालय हमारा कितना अच्छा है) का अभ्यास करना ।

② चढ़ पढ़ अपने माता-पिता या किसी की मदद से एक भजन लिख कर आना है ।

कक्षा - 4 व 5

① निम्नलिखित गीतों को लिखना व अभ्यास करना ——

(i) आकाश गंगा सूर्य चंद्र तारा — ।
(ii) हिन्द देश के निवासी — ।
(iii) We shall overcome - - - - ।
(iv) सारे जहां से अच्छा — ।

② किसी भी प्रसिद्ध संगीतकार के बारे में अपनी music copy में लिखकर लाना है ।

कक्षा-6वीं   शरदकालीन गृहकार्य
2023-24.

1. अर्द्धवार्षिक प्रश्न-पत्र को हल करें ।
2. मेरा विद्यालय, अनुशासन का महत्त्व पर 80 से 100 शब्दों में अनुच्छेद लिखें ।
3. बाल रामकथा के प्रत्येक पाठ से दस स्वरचित प्रश्नोत्तर 15 से 30 शब्दों में लिखें ।
4. प्राचार्य महोदय को शुल्क माफी के लिए आवेदन पत्र लिखें ।
5. खेल के महत्त्व को समझाते हुए अपने भाई को पत्र लिखें ।

शरदकालीन गृहकार्य
2023-24.
कक्षा-8वीं

1. अर्द्धवार्षिक परीक्षा का प्रश्न-पत्र अभ्यास पुस्तिका में हल करें ।
2. G-20 तथा एक भारत, श्रेष्ठ भारत पर अनुच्छेद लिखिए। (शब्द सीमा - 100 से 120 शब्द)
3. प्राचार्य महोदय को पत्र लिखिए जिसमें पुस्तकालय में हिन्दी पत्रिकाएँ मंगवाने के लिए निवेदन किया गया है।
4. किसी मेला का वर्णन करते हुए अपने मित्र को पत्र लिखिए।

K.V. CHERO SALEMPUR

AUTUMN BREAK HOME WORK (2023-24)

CLASS - VIII A   SUBJECT – SCIENCE

1. Prepare MDP (Multi-disciplinary Project) For **Term - II** on the Topic – CONSERVATION OF PALNTS AND ANIMALS (DEFORESTATION, NATIONAL PARKS, BIOSPHERE RESERVES, FLORA AND FAUNA, ENDEMIC SPECIES)
2. Prepare learners diary for Term - II
3. Complete the activities given in chapters and write it in activity copy.
4. Complete your CW & HW if any incomplete, cover your copy and book with brown cover and paste name slip.
5. Write the correct answers of H.Y. Exam Q.P. in H.W. Copy.

K.V. CHERO SALEMPUR

AUTUMN BREAK HOME WORK (2023-24)

CLASS - X A & B   SUBJECT – BIOLOGY

1. Read the Chapter management of natural resources and prepare a writeup of important natural resources, their use and consumption. Also write about conservation of natural resources.
2. Write the questions & Correct answers of PT-1 & 2 Exam in H.W. copy.
3. Write the Practical in practical copy as informed you.

K.V. CHERO SALEMPUR

AUTUMN BREAK HOME WORK (2023-24)

CLASS - XI A   SUBJECT – BIOLOGY

1. Prepare a project (Project File) on Classification and economic importance of Fungi and Algae.
2. Complete your CW & HW if any incomplete, cover your copy and book with brown cover and paste name slip.
3. Write the correct answers of **Practice test** and **P.T. – 1** Questions in copy.
4. Read the Chapter Biomolecules.

K.V. CHERO SALEMPUR

AUTUMN BREAK HOME WORK (2023-24)

CLASS - XII A   SUBJECT – BIOLOGY

1. Prepare an investigatory project as per syllabus of practical for Practical exam.
2. Revise Chapters – 2,3,4,5,6 & 8 for Monthly/ Class test for October month.
3. Complete your CW & HW if any incomplete, cover your copy and book with brown cover and paste name slip.
4. Solve the questions of the chapters so far studied as given in sample papers.
5. Write correct answers of All monthly test questions in your copy.

Kendriya Vidyalaya Chero Salempur

Autumn break homework

Class - VI   Subject - Science

Question. 1. Write the deficiency diseases and symptoms due to deficiency of Vitamin A, C, D, iron and Iodine.

Question.2. What are the different properties of a material ?

Question . 3. What are the different methods of separating substances ? Describe in brief .

Question .4 . What is the difference between reversible and Irreversible change? Give example.

Question .5. Draw the structure of leaf ,flower and fruit and label their parts.

Question. 6. What are joints ? Describe four types of joints.

Question. 7 .What is streamlined shape of the body ? What is the use of this shape of the body? Write one example where it is found?

Kendriya Vidyalaya,Chero Salempur

Autumn break homework

Class -VII   Subject- Science

Question .1. (A) What is the structural and functional unit of kidney?

   (B) State the function of valve.

Question .2.(A) What are stomata?Give two functions of stomata.

   (B) what makes the blood look red ?

Question .3. Why is it necessary to excrete waste products?

Question .4. What are the components of blood ? Write one function each.

Question . 5. (A) What is transpiration?

   (B) Does transpiration serve any useful function in the plants ? Explain.

Question .6. Draw a diagram of human heart? Describe the blood circulation in the human heart.

Question .7. Write any three differences between arteries and veins.

Question .8. What are the function of xylem and phloem ?

Question. 9. Draw a diagram of the human excretory system and label the various part of it ?

Kendriya Vidyalaya , Chero Salempur

Autumn break homework 2023- 24

Class-VIII   Subject - Science

Question . 1. Make a chart of Nitrogen carbon and phosphorus cycle.

Question .2. Write the different types of hormones and endocrine glands

producing them.

Question .3. The term metamorphosis is not used while describing Human

development.Why?

Question. 4. Hence and frogs are both oviparous exhibiting different types of

fertilization.Explain.

Question. 5. Name the first reserve forest of India.

Question .6. Write the exercise question and answers of the chapter

Reproduction in animals.

Kendriya Vidyalaya, Chero Salempur

Autumn break homework 2023-24

Class - IX   Subject-Science

Question. 1. What are ionic and Molecular compounds? Give examples.

Question .2. Which are the 6 postulates of Dalton's atomic theory ?

Question .3. What is meant by chemical formula ? Give examples.

Question. 4. Why do isotopes show similar chemical properties?

Question.5. Do all intext and exercise questions and answers of the chapter

atoms and molecules and force and laws of motion.

ENGLISH CLASS 4

HOLIDAY HOMEWORK

1.Write the poem Hiawatha in a good handwriting.

2. Write any 20 words and its meaning in your copy from Hiawatha.

3. Write any one story in English and draw pictures related to story.

4. Write 5 pages handwriting.

MATHS CLASS 4B

HOLIDAY HOMEWORK

1. Draw 10 objects having shape of circle and colour them.

2. Draw 4 different design using circle and colour them.

3. Make a price list of vegetables find :

     a- Cost of ½ kg tomatoes

     b. Cost of ¼ kg cauliflower.

     c. Cost of 4 kg potatoes

     d. Cost of two and half kg onions.

केंद्रीय *विद्यालय* चेरो – सलेमपुर
शरदकालीन अवकाश गृहकार्य

हिंदी :- 9,10
शरदकालीन अवकाश गृहकार्य - 2023-24
कक्षा - नौवीं

प्रश्न 1. निम्नलिखित प्रस्थान बिंदु के आधार पर 100 शब्दों में <u>शीर्षक</u> सहित एक लघु कथा लिखिए-

एक बूढ़ा किसान था। उसके चारों पुत्र आपस में झगड़ा करते थे। किसान बहुत दुखी था। उसने एक दिन अपने चारों पुत्रों को बुलाया, दुखी मन से कहा, " आपस में झगड़ा करना नहीं करना चाहिए और तुम लोगों को मिल जुल कर रहना चाहिए।" पिताजी की बातें सुनकर चारों पुत्र वहाँ से चले गएँ। पर लड़ाई-झगड़े का सिलसिला जारी रहा, फिर एक दिन उस बूढ़े किसान ने एक उपाय सोचा...................

प्रश्न 2. निम्नलिखित विषयों पर 120 शब्दों का अनुच्छेद लिखिए।

1. एक भारत श्रेष्ठ भारत

2. नई शिक्षा नीति 2020

प्रश्न 3. "गीता पुस्तक पढ़ती है।" इस वाक्य को अर्थ के आधार पर वाक्य के आठों (8) भेदों में रूपांतरित कीजिए।

प्रश्न 4. अलंकार के सभी भेदों के दो - दो उदाहरण लिखकर कंठस्थ कीजिए।

प्रश्न 5. अर्द्ध वार्षिक परीक्षा के प्रश्न-पत्र को हल करें।

प्रश्न 6. विद्यालय - पत्रिका प्रकाशित हो रही है। अतः आप अपनी लिखी कोई कविता / कहानी/लेख/ कोरोना के अनुभव आदि विद्यालय खुलते ही मुझे जमा करेंगे।

शरदकालीन अवकाश गृहकार्य - 2023-24
कक्षा - दसवीं

प्रश्न 1. लड़कियों की घटती संख्या के बारे में जन जागरूकता लाने के उद्देश्य से 25 से 50 शब्दों में एक विज्ञापन लिखिए |

<div align="center">अथवा</div>

आप एक नया मोबाइल शोरूम खोलने जा रहे हैं किसी स्थानीय समाचार पत्र में देने के लिए 60 शब्दों में एक विज्ञापन लिखिए|

प्रश्न 2. निम्नलिखित विषयों पर 120 शब्दों का अनुच्छेद लिखिए।

     1. आज़ादी का अमृत महोत्सव

    2.नई शिक्षा नीति 2020

प्रश्न 3. निर्देशानुसार वाक्य परिवर्तन कीजिए-

    लोग खाना खा रहे होंगे | (कर्मवाच्य)

    अनेक आतंकवादियों को मारा गया | (कर्तृवाच्य)

    वह नहीं दौड़ा | (भाववाचक)

    यह पत्र शुभी ने भेजा होगा | (कर्मवाच्य)

प्रश्न 4. स्ववृत लिखकर लाएँ।

प्रश्न 5. सामयिक परीक्षा - २ के प्रश्न-पत्र को हल करें।

प्रश्न 6. विद्यालय - पत्रिका प्रकाशित हो रही है। अतः आप अपनी लिखी कोई कविता / कहानी/लेख/ कोरोना के अनुभव आदि विद्यालय खुलते ही मुझे जमा करेंगे।

<div align="center">

अभ्यास भाग

</div>

प्रश्न 1– व्याकरण से सम्बंधित भाग का अभ्यास कीजिए ।

प्रश्न 2– क्षितिज पुस्तक के समस्त पाठों का अभ्यास कीजिए ।

प्रश्न 3– कृतिका के समस्त पाठों का अभ्यास कीजिए ।

शरदकालीन अवकाश गृहकार्य - 2023-24
कक्षा – ग्यारहवीं

प्रश्न 1 . दस दिनों की डायरी लिखकर लाएँ।

प्रश्न २. किसी घटना /स्थिति के आधार पर दृश्य लेखन लिखिए –

प्रश्न 3.जनसंचार के प्रमुख माध्यमों (विभिन्न माध्यमों के लिए लेखन पाठ पर आधारित) पर आधारित बीस बहुविकल्पीय प्रश्न तैयार करिए –

प्रश्न 4. स्ववृत्त लिखकर लाएँ।

प्रश्न 5. अप्रत्याशित विषय पर रचनात्मक लेख :—

*भारत की वैज्ञानिक उन्नति

* खेलों में बढ़ता वर्चस्व भारत का

प्रश्न 6. विद्यालय - पत्रिका प्रकाशित हो रही है। अतः आप अपनी लिखी कोई कविता / कहानी/लेख/ कोरोना के अनुभव आदि विद्यालय खुलते ही मुझे जमा करेंगे।

प्रश्न 7. परियोजना कार्य तैयार करें :— उत्तराखंड के किन्हीं दस स्वतंत्रता संग्राम सेनानियों की परियोजना फ़ाइल बनाएँ, जिसमें इन सेनानियों की फ़ोटो, नाम, जन्म-मृत्यु तिथि, महत्त्वपूर्ण कार्य/ स्वतंत्रता प्राप्ति हेतु सहयोग आदि का वर्णन हो। (A4 साइज़ पेपर में) (कम-कम बीस पृष्ठों में यह कार्य करें ।)

कक्षा-बारहवीं(शरदकालीन अवकाश-गृहकार्य) 2023-24
विषय- हिन्दी

लिखित भाग

प्रश्न 1- अभिव्यक्ति और माध्यम के पाठ 3,4,5 से पाँच-पाँच बहुविकल्पीय प्रश्न तैयार करके लाएँ।

प्रश्न 2– एक गीत, कविता के बहाने, कवितावली- इन कविताओं का काव्य-सौन्दर्य लिखिए ।

प्रश्न 3– सीबीएसई द्वारा प्रदत्त प्रतिदर्श प्रश्नपत्र को हल कीजिए ।

प्रश्न 4 – वितान के पढ़ाए गए पाठ से दस बहुविकल्पीय प्रश्न तैयार करें।

प्रश्न 5. विद्यालय - पत्रिका प्रकाशित हो रही है। अतः आप अपनी लिखी कोई कविता / कहानी/लेख/ कोरोना के अनुभव आदि विद्यालय खुलते ही मुझे जमा करेंगे।

अभ्यास भाग

प्रश्न 1– जनसंचार से सम्बंधित भाग का अभ्यास कीजिए ।

प्रश्न 2– वितान पुस्तक के समस्त पाठों का अभ्यास कीजिए ।

प्रश्न 3– आरोह के समस्त पाठों का अभ्यास कीजिए ।

KENDRIYA VIDYALAYA , CHERO-SALEMPUR

AUTUMN BREAK HOLIDAYS HOME WORK (2023-2024)

<u>CLASS: V ENGLISH</u>

- Write any two paragraphs from the lesson the talkative barber and frame your question and answer .
- Write 20 new words with their meanings.
- Collect any two article about wild animals .
- Make a poster of the Barber.

(केन्द्रीय विद्यालय, चेरो सलेमपुर)

शरद ऋतु अवकाश (गृहकार्य)

कक्षा- 4 'अ'/ब, (2023-24)

विषय- 'हिन्दी "

(1) अपनी दादी का परिचय लिखो।

(2) पाठ "स्वतंत्रता की ओर" पढ़िए व कठिन शब्द लिखिए।

(3) विभिन्न पन्नो की सहायता से किसी एक जानवर का चित्र बनाऐं।

(4) प्रतिदिन एक पेज सुलेख लिखिए।

(1) Draw 10 object having shape of circle colour them.

(2). Draw 8 different design using circle them.

(3) Draw 4 circles having radie 3cm, 4cm, 5cm, 6cm respectively.

(4) Draw any 5 shapes, Divide them into two equal part and colour any one of them.

दशहरा अवकाश गृह कार्य

*कक्षा बारहवीं *

1.हिंदी साहित्य के इतिहास का संक्षिप्त परिचय देते हुए आधुनिक काल के कुछ कवियों और उनकी रचनाओं की सूची तैयार करें ।

2. मुंशी प्रेमचंद के व्यक्तित्व और कृतित्व पर अपने विचार लिखिए। 3. भक्ति काल में कबीर और तुलसी का योगदान विषय पर तर्क सहित विचार लिखिए।

4. नाटक, कहानी व कविता का संक्षिप्त परिचय देते हुए उनके तत्व और उनके बीच के अंतर को स्पष्ट कीजिए।

5. अर्धवार्षिक परीक्षा को ध्यान में रखते हुए निर्धारित नील प्रपत्र और पाठ्यक्रम के अनुसार 80 अंकों का एक प्रश्न पत्र उत्तर पत्र तैयार करें।
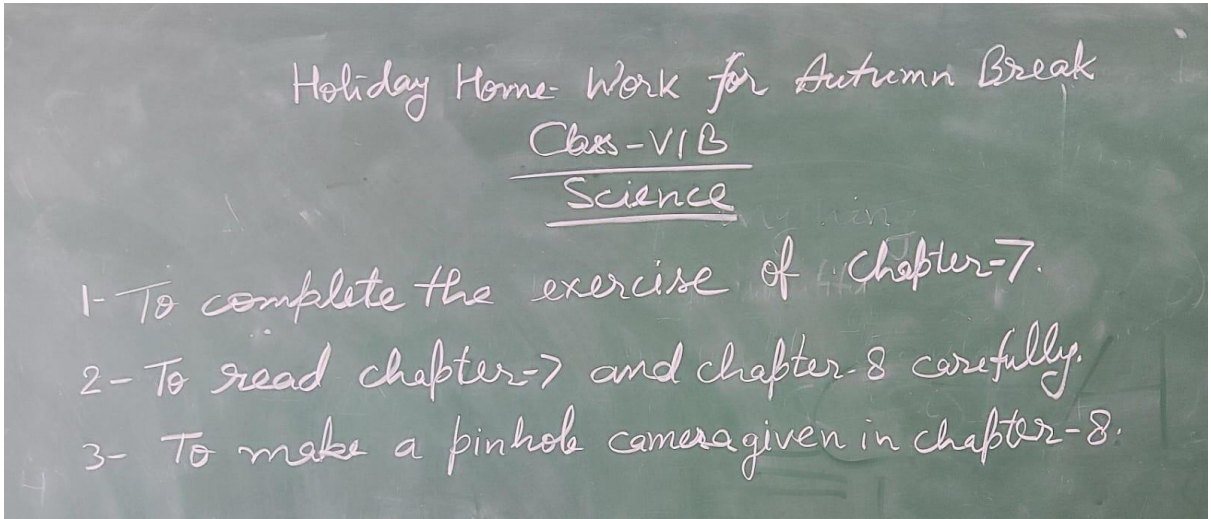
Sample Paper 1
Class XII 2023-24
Chemistry

Time: 3 Hours   **Max. Marks: 70**

General Instructions:
1. There are 33 questions in this question paper with internal choice.
2. SECTION A consists of 16 multiple-choice questions carrying 1 mark each.
3. SECTION B consists of 5 very short answer questions carrying 2 marks each.
4. SECTION C consists of 7 short answer questions carrying 3 marks each.
5. SECTION D consists of 2 case-based questions carrying 4 marks each.
6. SECTION E consists of 3 long answer questions carrying 5 marks each.
7. All questions are compulsory.
8. Use of log tables and calculators is not allowed.

SECTION-A

Directions (Q. Nos. 1-16) : The following questions are multiple-choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.

1. For the reaction, $2X + Y \longrightarrow X_2 Y$
   What will be the expression for instantaneous rate of the reaction?
   (a) $+\frac{1}{2}\frac{d(Y)}{dt}$
   (b) $-\frac{1}{2}\frac{d(X_2 Y)}{dt}$
   (c) $\frac{-d(X)}{2dt}$
   (d) None of these

2. Out of the following, the strongest base in aqueous solution is:
   (a) dimethylamine
   (b) aniline
   (c) methylamine
   (d) trimethylamine

3. Which of the following compound will not undergo azo coupling reaction with benzene diazonium chloride?
   (a) Phenol
   (b) Aniline
   (c) Nitrobenzene
   (d) Anisole

4. A graph was plotted between molar conductivity of various electrolytes (NaCl, HCl and NH_4OH) and $\sqrt{c}$ (in mol L^{-1}). Which of the following is the correct set?
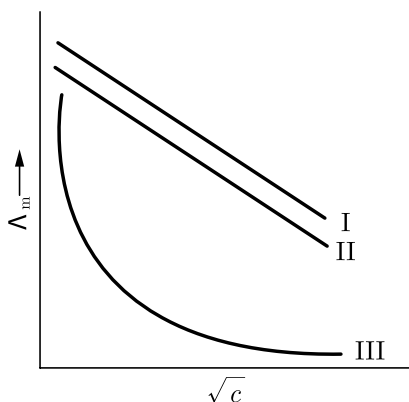
(a)   I (NH_4OH), II (HCl), III (NaCl)

(b)   I (NaCl), II (HCl), (III) (NH_4OH)

(c)   I (HCl), II (NaCl), III (NH_4OH)

(d)   I (NH_4OH), II (NaCl), III (HCl)

5.   The role of a catalyst is to change :

(a)   enthalpy of reaction   (b) Gibbs' energy of reaction

(c)   equilibrium constant   (d) activation energy of reaction

6.   Out of the following transition elements, the maximum number of oxidation states are shown by:

(a)   Cr ($Z = 24$)   (b) Sc ($Z = 21$)

(c)   Fe ($Z = 26$)   (d) Mn ($Z = 25$)

7.   The value of K_H for Ar(g), CO_2(g), HCHO(g) and CH_4(g) are 40.39, 1.67, 1.83×10^{-5} and 0.413 respectively. Arrange these gases in increasing order of solubility.

(a)   Ar $<$ CO_2 $<$ CH_4 $<$ HCHO   (b) Ar $<$ CH_4 $<$ CO_2 $<$ HCHO

(c)   HCHO $<$ CH_4 $<$ CO_2 $<$ Ar   (d) HCHO $<$ CO_2 $<$ CH_4 $<$ Ar

8.   What is the correct IUPAC name of the given compound?
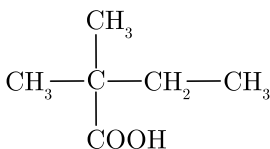
(a)   2-carboxyl-2-methylpropanoic acid

(b)   2-ethyl-2-methylpropanoic acid

(c)   3-methylabutance carboxylic acid

(d)   2, 2-dimethylbutanoic acid

9. The boiling points of alcohols are higher than those of hydrocarbons of comparable masses due to:

(a)   ion-dipole interaction   (b) dipole -dipole interaction

(c)   hydrogen bonding   (d) vander Waals forces

10. For the reaction $2H_2O_2 \longrightarrow 2H_2O + O_2$, $r = k[H_2O_2]$. The reaction is of :

(a)   first order   (b) second order

(c)   third order   (d) zero order

11. The compound obtained by the reaction of nitrous acid on aliphatic primary amine is:

(a)   alkyl nitrite   (b) alcohol

(c)   nitroalkane   (d) secondary amine

12. A graph was plotted between the molar conductivity Using valence bond theory, the complex $[Cr(NH_3)_6]^{3+}$ can be described as :

(a) d^2sp^3, inner orbital complex, paramagnetic

(b) d^2sp^3, outer orbital complex, diamagnetic

(c) sp^3d^2, outer orbital complex, paramagnetic
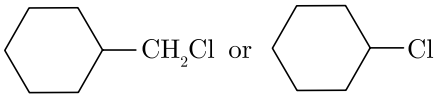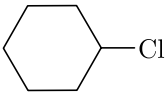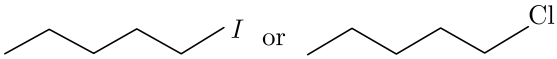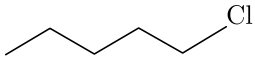
(d) dsp^2, inner orbital complex, diamagnetic

Directions (Q. Nos. 13-16) : Each of the following questions consists of two statements, one is Assertion and the other is Reason. Give answer :

13. **Assertion :** Vanadium had the ability to exhibit a wide range of oxidation states.
Reason : The standard potentials Vanadium are rather small, making a switch between oxidation states relatively easy.

(a)   Both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

(b)   Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(c)   Assertion is fake but Reason is true.

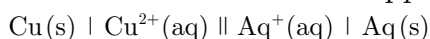(d)   Assertion is true but Reason is fake.

14. **Assertion :** DNA has a double strand helix structure.
Reason : The two strands in a DNA molecule are exactly similar.

(a)   Both Assertion and Reason are true but Reason is not a correct explanation of Assertion.

(b)   Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(c)   Assertion is fake but Reason is true.

(d)   Assertion is true but Reason is fake.

15. **Assertion :** Tertiary butylamine can be prepared by the action of NH_3 on tert-butylbromide.
Reason : Tertiary butyl bromide being 3° alkyl halide prefers to undergo elimination on the treatment with a base.
(a) Both Assertion and Reason are true but Reason is not a correct explanation of Assertion.
(b) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(c) Assertion is fake but Reason is true.
(d) Assertion is true but Reason is fake.

16. **Assertion :** IUPAC name of the compound
$$CH_3 - \underset{\underset{CH_3}{|}}{CH} - O - CH_2 - CH_2 - CH_3$$
is 2-Ethoxy-2-methylethane.
Reason : In IUPAC nomenclature, ether is regarded as hydrocarbon derivative in which a hydrogen atom replaced by —OR or —OAr group
[where R = alkyl group and Ar = aryl group]
(a) Both Assertion and Reason are true but Reason is not a correct explanation of Assertion.
(b) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(c) Assertion is fake but Reason is true.
(d) Assertion is true but Reason is fake.

SECTION-B

Directions (Q. Nos. 17-21) : This section contains 5 questions with internal choice in one question. The following questions are very short answer type and carry 2 marks each.

17. Time required to decompose SO_2Cl_2 to half of its initial amount is 60 minutes. If the decomposition is a first order reaction, calculate the rate constant of the reaction.

18. Which one of the following pairs of substances undergoes S_N2 substitution reaction faster and why?
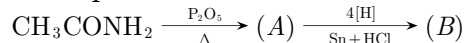
(i) —CH_2Cl or —Cl

(ii) I or Cl

19. A cell is constructed between copper and silver
$$Cu(s) \mid Cu^{2+}(aq) \parallel Aq^+(aq) \mid Aq(s)$$
If the two half-cells are working under standard condition, then calculate the emf of the cell.
$$E°_{Cu^{2+}/Cu} = +0.34\ V,\ E°_{Ag^+/Ag} = +0.80\ V$$

20. Identify compounds (A) and (B) in the following reactions and write the related balanced chemical equation :

$$CH_3CONH_2 \xrightarrow[\Delta]{P_2O_5} (A) \xrightarrow[Sn+HCl]{4[H]} (B)$$

or

Complete and name the following reaction:

(i) $RNH_2 + CHCl_3 + 3KOH \longrightarrow$

(ii) $RCONH_2 + Br_2 + 4NaOH \longrightarrow$
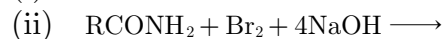
21. (i)   Sketch the zwitter ionic form of α-amino acetic acid.

(ii)   What type of linkage holds together the monomers in DNA?

SECTION-C

Directions (Q. Nos. 22-28) : This section contains 7 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.

22. A zinc rod is dipped in 0.1 M solution of $ZnSO_4$. The salt is 95% dissociated at this dilution at 298K. Calculate the electrode potential.

$[E^{\circ}_{(Zn^{2+}/Zn)} = -0.76 \text{ V}]$

23. (i)   Give the electronic configuration of the d-orbitals of Ti in $[Ti(H_2O)_6]^{3+}$ ion and explain why this complex is coloured ? [At. No. of Ti $= 22$]

(ii)   Write IUPAC name of $[Cr(NH_3)_3 (H_2O)_3]Cl_3$.

24. (i)   Draw the structural formulas and write IUPAC names of all the isomeric alcohols with the molecular formula $C_5H_{12}O$.

(ii)   Classify the isomers of alcohols given in part (a) as primary, secondary and tertiary alcohols.

25. Answer the following questions :(Any three)

(i)   What do you mean by depression in freezing point?

(ii)   How can the molecular weight of a non-volatile substance be calculated by freezing point depression method? Only give the formula.

(iii)   Measurement of osmotic pressure method is preferred for the determination of molar mass of macromolecules such as proteins and polymers.

(iv)   Elevation of boiling point of 1M KCl solution is nearly double than that of 1 M sugar solution.

26. (i)   Write the IUPAC name of the following complex :

$[Co(NH_3)_4(H_2O)Cl]Cl_2$

(ii)   What is the difference between an Ambidentate ligand and a Bidentate ligand?

(iii)   Out of $[Fe(NH_3)_6]^{3+}$ and $[Fe(C_2O_4)_3]^{3-}$, which complex is more stable and why ?

27. What happens when :
  (i)   N-ethylethanamine reacts with benzenesulphonyl chloride.
  (ii)   Benzylchloride is treated with ammonia followed by the reaction with Chloromethane.
  (iii)   Aniline reacts with chloroform in the presence of alcoholic potassium hydroxide.

28. How will you convert ethanal to the following compounds?
  (i)   Butane-1, 3-diol
  (ii)   But-2-enal
  (iii)   But-2-enoic acid

SECTION-D

Directions (Q. Nos. 29-30) : The following questions are case–based questions. Each question has an internal choice and carries 4 marks each. Read the passage carefully and answer the questions that follow.

29. The rate law for a chemical reaction relates the reaction rate with the concentrations or partial pressures of the reactants. For a general reaction $aA + bB \longrightarrow C$ with no intermediate steps in its reaction mechanism, meaning that it is an elementary reaction, the rate law is given by $r = k[A]^x[B]^y$, where [A] and [B] express the concentrations of A and B in moles per litre. Exponents x and y vary for each reaction and are determined experimentally. The value of k varies with conditions that affect reaction rate, such as temperature, pressure, surface area, etc. The sum of these exponents is known as overall reaction order. A zero order reaction has a constant rate that is independent of the concentration of the reactants. A first order reaction depends on the concentration of only one reactant. A reaction is said to be second order when the overall order is two. Once we have determined the order of the reaction, we can go back and plug in one set of our initial values and solve for k.
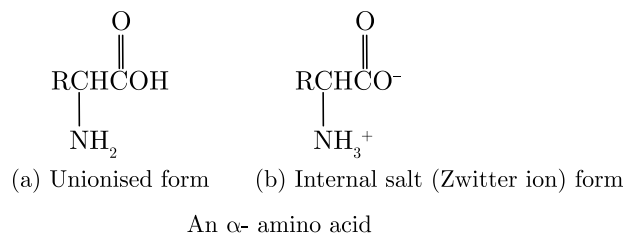 In the context of the given passage, answer the following questions :
  (i)   Calculate the overall order of a reaction which has the following rate expression :
          Rate $= k[A]^{1/2}[B]^{3/2}$
  (ii)   What is the effect of temperature on rate of reaction?
  (iii)   A first order reaction takes 77.78 minutes for 50% completion. Calculate the time required for 30% completion of this reaction log 10 = 1, log 7 = 0.8450.
                                    or
  (iv)   A first order reaction has a rate constant 1×10^{-3} per sec. How long will 5g of this reactant take to reduce to 3 g?
          (log 3 = 0.4771; log 5 = 0.6990)

30. An amino acid is a compound that contains both carboxyl group and an amino group. Although, many types of amino acids are known, the α-amino acids are the most significant in the biological world because they are the monomers from which proteins are constructed. A general structural formula of an α-amino acid is shown in figure below.

$$O$$
$$\parallel$$
RCHCOH

NH$_2$

$$O$$
$$\parallel$$
RCHCO$^-$

NH$_3^+$

(a) Unionised form (b) Internal salt (Zwitter ion) form

An α- amino acid

Although, figure (a) is a common way of writing structural formulas for amino acids, it is not accurate because it shows an acid (—COOH) and a base (—NH$_2$) within the same molecule. These acidic and basic groups react with each other to form a dipolar ion or internal salt (figure (b). The internal salt of an amino acid is given the special name Zwitter ion. Note that a Zwitter ion has no net charge, it contains one positive charge and one negative charge.

Because they exist as Zwitter ions, amino acids have many of the properties associated with salts. They are crystalline solids with high melting points and are fairly soluble in water but insoluble in non-polar organic solvents such as ether and hydrocarbon solvents.

According to the above passage, answer the following questions :

(i) Amino acids are usually colourless, crystalline solids. They behave like salts rather than simple amines or carboxylic acids. Why amino acids show such a behaviour?

(ii) Amino acids are essential and non-essential depending upon their need. One of the essential amino acid is lysine. Can you say why lysine is considered an essential amino acid?

(iii) Here are given some amino acids—lysine, Tyrosine, Glycine, Alamine. One of these amino acids is not optically active. Which one is that amino acid? Also, provide the reason.

or

(iv) The pk_{a_1}, and pk_{a_2}, of an amino acid are 2.3 and 9.7 respectively. What would be the isoelectric point of the amino acid? Calculate by defining it.

SECTION-E

Directions (Q. Nos. 31-33) : The following questions are long answer type and carry 5 marks each. Two questions have an internal choice.

31. (i) The cell in which the following reaction occurs:
$$2Fe^{3+}(aq) + 2I^-(aq) \longrightarrow 2Fe^{2+}(aq) + I_2(s)$$
has $E°_{Cell} = 0.236$ Volt at 298K. Calculate the standard Gibbs energy of the cell reaction. (Given : 1F = 96,500 C mol^{-1})

(ii) How many electrons flow through a metallic wire if a current of 0.5 A is passed for 2 hours? (Given : 1F = 96,500 C mol^{-1})

(iii) Explain the following with reason :
(a) Chlorine can displace iodine from KI solution but iodine can not displace bromine from KBr solution.
(b) Following reaction is possible or not.
$$Hg + H_2SO_4 \longrightarrow HgSO_4 + H_2$$

32. (i) Account for the following :
(a) Transition metals from large number of complex compounds.
(b) The lowest oxide of transition metal is basic whereas the highest oxide is amphoteric or acidic.
(c) $E°$ value for the Mn^{3+}/Mn^{2+} couple is highly positive $(+1.57\ V)$ as compare to Cr^{3+}/Cr^{2+}.

(ii) Write one similarity and one difference between the chemistry of lanthanoid and actinoid elements.

or

(i) (a) How is the variability in oxidation states of transition metals different from that of the p-block elements ?
(b) Out of Cu^+ and Cu^{2+}, which ion is unstable in aqueous solution and why ?
(c) Orange colour of $Cr_2O_7^{2-}$ ion changes to yellow colour when treated with an alkali. Why ?

(ii) Chemistry of actinoids is complicated as compared to lanthanoids. Give two reasons.

33. (i) Write the product (s) in the following reactions:

(a) $+\ HCN\ \longrightarrow\ ?$

(b) $+\ NaOH\ \xrightarrow[\Delta]{CaO}$

(c) $CH_3 - CH = CH - CN \xrightarrow[(b)\,H_2O]{(a)\,DIBAL-H} ?$
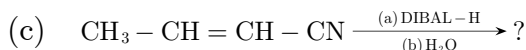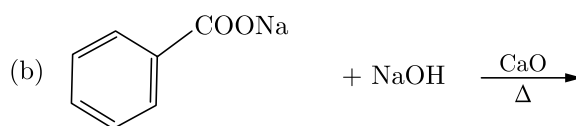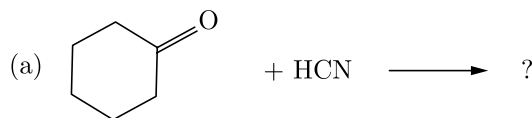
(ii) Give simple chemical test to distinguish between the following pairs of compounds :
(a) Butanal and Butan-2-one.
(b) Benzoic acid and Phenol.

or

(i) An organic compound (A) with molecular formula C_3H_7NO on heating with Br_2 and KOH forms a compound (B), compound (B), on heating with $CHCl_3$ and alcoholic KOH produces a foul smelling compound (C) and on reacting with $C_6H_5SO_2Cl$ forms a compound (D) which is soluble in alkali. Write the structures of (A), (B), (C) and (D).

(ii) Give reasons to support the answer :
(a) Presence of alpha hydrogen in aldehydes and ketones is essential for aldol condensations.
(b) 3-Hydroxy pentan-2-one shows positive result to Tollen's test.

□□□□□□

PRACTICE PROBLEMS ON PHOTO ELECTRIC EFFECTS

1. The photoelectric threshold wavelength of a metal is 5000 Å. Find (i) the work function in electron volts and (ii) the kinetic energy of the photoelectrons in electron volts, ejected by the light of wave length 4000 Å.

2. Red light of wavelength 670 nm produces photoelectrons from a certain metal which requires a stopping potential of 0.5 V. What is the work function and threshold wavelength of the metal?

3. Calculate the velocity of a photoelectron if the work function of the target material is 1.24 eV and the wave length of incident light is 4.36×10^{-7} m.

4. The rest mass of an electron is 9.1×10^{-31} kg. What will be its massif it moves with 4/5th of the speed of light?

5. Calculate the threshold frequency of photons which can remove photoelectrons from (i) caesium and (ii) nickel surface (work function of caesium is 1.8 eV and work function of nickel is 5.9 eV)

6. If the speed of photoelectrons is 104 ms^{-1}, calculate the frequency of the radiation incident on a potassium metal? Work function of potassium is 2.3 eV?

7. Ultra violet light of wave length 2271 Å from a source irradiates a photo-cell which is made of molybdenum metal. If the stopping potential is 1.3 volt, calculate the work function of the metal. How would the photo cell respond to a high intensity (10^5 Wm^{-2}) red light of wavelength 6328 Å produced by He – Ne Laser?

8. The work function of Iron is 4.7 eV. Calculate the cut off frequency and the corresponding cut off wave length for this metal.

9. For an observer imagined to be moving at a speed of 36×10^6 km/hr, length of the rod measures 1m. Find the length of the rod as measured by a stationary observer.

10. The time interval measured by an observer at rest is 2.5×10^{-8} s. What is the time interval as measured by an observer moving with a velocity v = 0.73 c.

11. Calculate the rest energy of an electron in MeV (mass of an electron 9.11×10^{-31} kg).

12. A proton is moving at a speed of 0.900 times the velocity of light. Find its kinetic energy in joules and MeV.

Kendriya Vidyalaya Chero Salempur

Autumn Break Homework (2023-24)

Subject: English Class – VIII

Q. 1. Write and learn three forms of verb. (50 verbs)

Q. 2. Write an example of each Tense(Affirmative,Negative,Interrogative).

Q. 3. Write an application to your Principal for the change of section.

Q. 4. Solve any two Unseen passages and paste in your notebook.

Q. 5. Read English Newspaper daily and write five headlines from Newspaper in your note book every day.

Q. 6.

Write a paragraph on **'How To Conserve Natural Resources'** and also make a poster with slogan.

KV Chero Salempur
English Project Work (2023-24)
Class – XI

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General Instructions:
• It is compulsory for all to prepare the Project file.
• The Internal Assessment will be in the form of Project Portfolio/Project Report and Viva.

> **FORMAT OF PROJECT FILE**
> Page 1 : COVER PAGE, WITH TITLE OF PROJECT, SCHOOL DETAILS/DETAILS OF STUDENTS.
> Page 2 : STATEMENT OF PURPOSE/OBJECTIVES/GOALS
> Page 3 : CERTIFICATE OF COMPLETION UNDER THE GUIDANCE OF THE TEACHER.
> Page 4 : ACTION PLAN FOR THE COMPLETION OF ASSIGNED TASKS.
> Mid Pages : PROJECT/REPORT DETAILS(Graphics and pictures to be pasted on left hand side and content of the report to be written in your own handwriting on the right hand side of the page.
> Last Page : LIST OF RESOURCES/BIBLIOGRAPH

1. Research on the Egyptians civilizations with particular reference to Tut's Mummy and its discovery. Stick pictures.

2. Research on salling terminology and parts of a boat and gather information about Isle Amsterdam.

3. Design a poster as an appeal for conserving water as most parts of India are facing serious problems and have been hit by drought.

4. Cut out 5 clippings of Classified ads under the heads-

- For sale

- To-let

- Situation vacant For matrimonial

- Pets/kennels

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KV CHERO SALEMPUR

AUTUMN BREAK HOMEWORK   (20 OCT 2023 TO 29 OCT 2023)

Class-XI   (English)

NOTE : i). Write each of the following questions in 100-120 words
       ii)   HW should be done in Class Work notebook.

1. Explain the reasons of changing relationship between the grandmother and the author.

2. Illustrate the central idea and theme of the poem 'The Laburnum Top'.

3. Discuss the values highlighted in the chapter The Portrait of a Lady.

4. Human life is short-lived in contrast to nature. Comment on the statement in the light of the poem A Photograph.

5. Can the act of stealing be ever justified? Give your views in the context of reading of The Summer of the Beautiful White Horse.

6. You are Riyazzuddin / Rihana, the Secretary of your school sports club. On behalf of the school Principal, write a letter to the Sales Manager of Delhi Sports Store, Murad Nagar, Delhi, placing an order for sports equipment - cricket bats, balls, volley balls, rackets etc.

7. You feel that the present generation is losing its health due to sedentary life style. There is a need to create awareness regarding health and fitness. Write a letter to the editor of a national daily expressing your views.

8. Your school organised a cleanliness drive on Mahatma Gandhi's birth anniversary. Students took the responsibility of keeping clean - the classrooms, corridors, assembly and playgrounds, canteen area and drinking water area. Write a report (150-200 words) on how the drive was organised and how successful it was.

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K.V. CHERO SALEMPUR

ENGLISH PROJECT WORK (2023-24)

CLASS- XII

Kindly follow the instructions

1. Use a simple ruled file with hard cover only.
2. Choose any 1 topic only.
3. File must have:
      A.Name and details of student and Subject and subject teacher's name.
      B.Project Topic (give suitable topic as per the question chosen)
      C.Certificate of originality
      D.Index
      E. Elaborately research/interview/ survey and write the content.
      F. Bibliography (references of books/websites, etc.) you took the content from.
      G.Your project should be in 15-20 pages only.
      H. Do not decorate the files. Just cover them with brown paper and keep it simple with quality content.
4. Your project must be handwritten and original. Print-out is not allowed.

Topics

1. What are some status symbols of the rich and famous? What are some things you are proud to own? The things we buy often have an effect on how we perceive ourselves and how we are perceived by others. These social and economic ties are at the roots of consumerism. The results are often overconsumption and overproduction as individuals struggle to continuously stay caught up with the latest trends and upgrades. Offer solutions to overproduction, increasing awareness of the environmental impact, and identifying the social ramifications.

2. Poverty and malnutrition is an overarching concern globally. In India, we not only produce an abundance of food, but we also waste an enormous amount, and it is appalling to see lakhs of people die of hunger. Food security cannot be achieved merely through increasing agricultural productivity. Attention also needs to be given to measures to reduce wastage. Research and study the pattern of food wastage by Indians in homes, weddings and in other places and their level of awareness regarding its consequences. Collect data and analyse it. Majority are found to leave food in their plates. Taste of the food, differences in food habits and taking more than required were cited as the main reasons for wasting food. Mention reasons and steps that can be taken to reduce food wastage.

3. What cultural diversities did you notice in all the chapters that you read in Hornbill & Snapshot(XI) /Flamingo and Vistas(XII)? Make a study of diversities such as geographical , food, languages, dressing, etc.

4. What is waste management? How waste management can help create a sanitized and better environment? What steps can be taken to minimise waste and manage them? What are different techniques to manage waste?

5. What is E-waste? How it damages the environment and health? How can it be managed? What steps can be taken to bring an awareness regarding the same?

6. "When people are enslaved, as long as they hold fast to their language it is as if they had a key to their prison" Do your research on examples in history where conquered people had their language taken away from them or had a language imposed on them. Make a file on the same.

7. Research and relate to the instances of game hunting among the rich and the powerful people in the present times that illustrate the callousness of human beings towards wildlife. You may have heard and read many stories and articles regarding hunting and poaching and how people take pride in it. But this has only affected the ecological balance and food cycle. Kindly survey and give instances from real life examples with relevant data to illustrate about the same.

8. Physically challenged people have to struggle far more than normal ones. The actual pain or inconvenience caused by their physical impairment is often much less than the sense of alienation felt by the persons with disabilities. Yet there are several physically challenged heroic figures who have inspired others inspite of they themselves facing many challenges and hurdles in life. Research on any one such person and make your own file on him/her.

K.V.CHERO SALEMPUR

AUTUMN BREAK HOMEWORK (20-10-2023 TO 29-10-2023)

ENGLISH   **CLASS- XII**

NOTE : i). Write each of the following questions in 100-120 words

ii) HW should be done in Class Work notebook.

1. You are the Secretary of the Neighbourhood Watch Scheme, Jastinapur, Sector D-3 Society. Draft a notice for the Society notice board, informing residents about the change of personnel, Head Security, Gate 2 and share necessary details. Also, include the news of installation of the much awaited security camera, on the Eastern periphery of the Society.

2. Smt. Leelavati Khatri, your grandmother, has received an invitation from her childhood friend , residing at a distance in the same city. The invite is for the blessing ceremony and celebratory dinner, marking the birth of her granddaughter. Your grandmother wishes to attend the event but would need to be accompanied by a family member to assist her with her wheelchair. Create an appropriate reply, accepting this invitation, on behalf of your grandmother.

3. Answer the question in the context of the following lines from 'The Enemy'. "Stupid Yumi," she muttered fiercely. "Is this anything but a man? And a wounded helpless man!" In the conviction of her own superiority she bent impulsively and untied the knotted rugs that kept the white man covered. Explain the superiority Hana is convinced about.

4. What does the play 'On the Face of It' suggest about the importance of empathy in overcoming prejudice and stereotypes?

5. How might the message of the poem, 'Aunt Jennifer's Tigers' be different, if the following last four lines were omitted? When Aunt is dead, her terrified hands will lie Still ringed with ordeals she was mastered by. The tigers in the panel that she made Will go on prancing, proud and unafraid.

6. How does the setting of the remote forest location in 'The Rattrap' contribute to the overall tone and mood of the story?

7. Douglas uses sensory details to create a vivid image of the unfortunate experience in the pool. What might be the impact on the reader if the narration were more informative than sensory? (Deep Water)

Sample Paper 3

Class X 2023-24

Science (086)

Time: 3 Hours   **Max. Marks: 80**

General Instructions:

1. This question paper consists of 39 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 Objective Type questions carrying 1 mark each.
4. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION-A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20.

1. A student determines the focal length of a device X, by focusing the image of a far off object on the screen positioned as shown in figure The device X is a
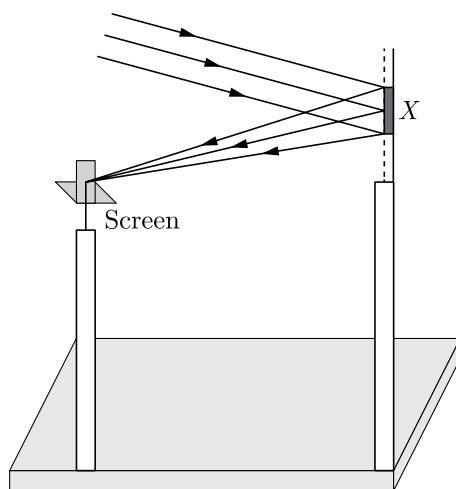
   (a) Convex lens
   (b) Concave lens
   (c) Convex mirror
   (d) Concave mirror

2. A student traces the path of a ray of light through a glass prism for different angles of incidence. He analysis each diagram and draws the following conclusion:

I. On entering prism, the light ray bends towards its base.

II. Light ray suffers refraction at the point of incidence and point of emergence while passing through the prism.

III. Emergent ray bends at certain angle to the direction of the incident ray.

IV. While emerging from the prism, the light ray bends towards the vertex of the prism.

Out of the above inferences, the correct ones are:

(a) I, II and III

(b) I, III and IV

(c) II, III and IV

(d) I and IV

3. The reaction that differs from the rest of the reaction given is-

(a) formation of calcium oxide from limestone

(b) formation of aluminium from aluminium oxide

(c) formation of sodium carbonate from sodium hydrogen carbonate

(d) formation of mercury from mercuric oxide

4. Consider the following table :

Substance	pH
Lemon	2.3
Battery acid	x
Sea water	8.5
Apple	3.1

The value of x in above table is:

(a) 0

(b) 1.3

(c) 2.5

(d) 1.9

5. Which of the following structures is involved in gaseous exchange in woody stem of a plant as shown in the figure?

(a) Stomata

(b) Guard cell

(c) Lenticel

(d) Epidermis

6. A feature of reproduction that is common to Amoeba, Spirogyra and yeast is that
   (a)   they reproduce asexually
   (b)   they are all unicellular
   (c)   they reproduce only sexually
   (d)   they are all multicellular

7. Ethane (C_2H_6) on complete combustion gave CO_2 and water. It shows that the results are in accordance with the law of conservation of mass. Then, the coefficient of oxygen is equal to
   (a)   7/2
   (b)   3/2
   (c)   5/2
   (d)   9/2

8. When white light passes through the achromatic combination of prisms, then what is observed ?
   (a)   Deviation
   (b)   Dispersion
   (c)   Both deviation and dispersion
   (d)   Atmospheric refraction

9. Magnesium reacts with hot water and steam both. Human body stores energy in form of:
   (a)   Glucose
   (b)   Insulin
   (c)   glycogen
   (d)   Fructose

10. No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be-
   (a)   Plane
   (b)   Concave
   (c)   Convex
   (d)   Either plane or convex

11. What must be preserved in an ecosystem, if the system needs to be maintained?
   (a)   producers and carnivores
   (b)   producers and decomposers
   (c)   Carnivores and decomposers
   (d)   Herbivores and carnivores

12. Posture and balance of the body is controlled by
   (a)   cerebrum
   (b)   cerebellum
   (c)   medulla
   (d)   pons

13. Magnesium ribbon is rubbed with sand paper before making it to burn. The reason of rubbing the ribbon is to:
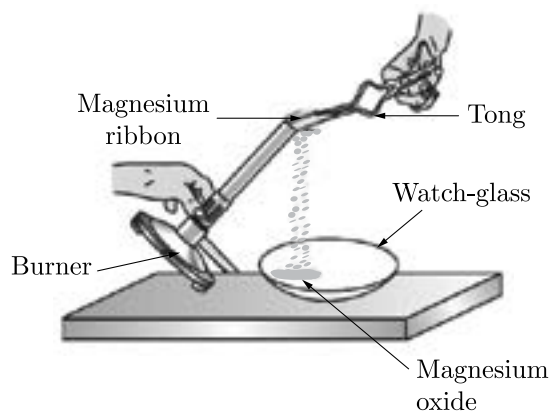
(a)   remove moisture condensed over the surface of ribbon.

(b)   generate heat due to exothermic reaction.

(c)   remove magnesium oxide formed over the surface of magnesium.

(d)   mix silicon from sand paper (silicon dioxide) with magnesium for lowering ignition temperature of the ribbon.

14. Mineral acids are stronger acids than carboxylic acids because
(i)   mineral acids are completely ionized.
(ii)   carboxylic acids are completely ionized
(iii)   mineral acids are partially ionized
(iv)   carboxylic acids are partially ionized
(a)   (i) and (iv)
(b)   (ii) and (iii)
(c)   (i) and (ii)
(d)   (iii) and (iv)

15. Which among the following statements is incorrect for magnesium metal?

(a)   It burns in oxygen with a dazzling white flame.

(b)   It reacts with cold water to form magnesium oxide and evolves hydrogen gas.

(c)   It reacts with hot water to form magnesium hydroxide and evolves hydrogen gas.

(d)   It reacts with steam to form magnesium hydroxide and evolves hydrogen gas.

16. Exposure of silver chloride to sunlight for a long duration turns grey due to

Sunlight

China dish
Silver chloride
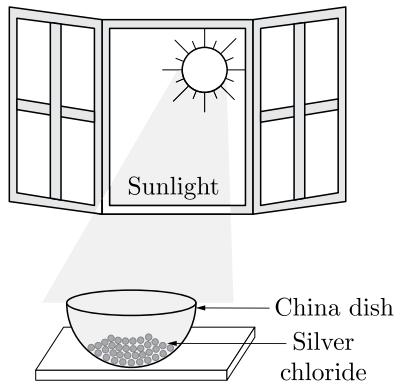
Which among the following statement(s) is(are) true?
1. the formation of silver by decomposition of silver chloride.
2. sublimation of silver chloride.
3. decomposition of chlorine gas from silver chloride.
4. oxidation of silver chloride.
(a) Only 1
(b) 1 and 3
(c) 2 and 3
(d) Only 4

Question no. 17 to 20 are Assertion-Reasoning based questions.

17. **Assertion :** Photosynthesis is considered as an endothermic reaction.
Reason : Energy gets released in the process of photosynthesis.
(a) Both Assertion and Reason are True and Reason is the correct explanation of the Assertion.
(b) Both Assertion and Reason are True but Reason is not the Correct explanation of the Assertion.
(c) Assertion is True but the Reason is False.
(d) Both Assertion and Reason are False.

18. **Assertion :** Our body maintains blood sugar level.
Reason : Pancreas secretes insulin which helps to regulate blood sugar levels in the body.
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

19. **Assertion :** Artificial kidney is a device used to remove nitrogenous waste products from the blood through dialysis.
Reason : Reabsorption does not occur in artificial kidney.
(a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) Assertion is true but Reason is false.
(d) Assertion is false but Reason is true.

20. **Assertion :** The product of resistivity and conductivity of a conductor depends on the material of the conductor.
     Reason : Because each of resistivity and conductivity depends on the material of the conductor.
     (a)   Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
     (b)   Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
     (c)   Assertion (A) is true but reason (R) is false.
     (d)   Assertion (A) is false but reason (R) is true.

SECTION-B

Question no. 21 to 26 are very short answer questions.

21. What prevents the metals such as magnesium, aluminium, zinc and lead from oxidation at ordinary temperature ?
     or
     Explain why sodium hydroxide solution cannot be kept in aluminium containers ? Write equation for the reaction that may take for the same.

22. If you keep the potted plant horizontally for 2-3 days, what type of movements would be shown by the shoot and root after two or three days. Why ?

23. What are the rules of inheritance ?

24. What is meant by pollination? Name and differentiate between the two modes of pollination in flowering plants.

25. State two positions in which a concave mirror produces a magnified image of a given object. List two differences between the two images.
     or
     What is the difference between virtual images produced by concave, plane and convex mirror ?

26. Give two examples each of producers, consumers and decomposer.

SECTION-C

Question no. 27 to 33 are short answer questions.

27. An organic compound with molecular formula C_3H_8O reacts with sodium metal to produce hydrogen gas. Deduce the possible structure of the compound. Write the balanced chemical equation of the reaction.

28. Explain the following chemical changes, giving one example in each case :
     (i)   Displacement or substitution,
     (ii) Dissociation,
     (iii) Isomerisation reaction.

29. Our government launches campaigns to provide information about AIDS prevention, testing and treatment by putting posters, conducting radio shows and using other agencies of advertisements.
     To which category of diseases AIDS belongs ? Name and explain. What is its causative organism ? Also give two more examples of such diseases.
     or
     Distinguish between pollination and fertilisation. Mention the site and the product of fertilisation in a flower.

30. Why does a ray of light passing through the centre of curvature of a concave mirror after reflection, is reflected back along the same path ?

31. (a) A compound lens is made of two lenses in contact having powers $+12.5\,D$ and $-2.5\,D$. Find the focal length and power of the combination.

(b) The magnification produced by a mirror is $+1$. What does this mean ?

32. In the given circuit, find :
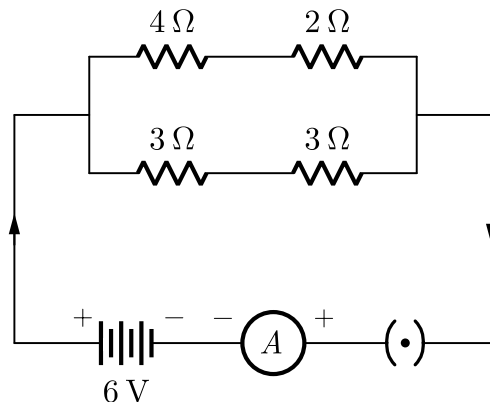
(a) Total resistance of the network of resistors

(b) Current through ammeter A

or

The values of current I flowing in a given resistor for the corresponding values of potential difference V across the resistor are given below:

I (ampere)	0.5	1.0	2.0	3.0	4.0
V (volt)	1.6	3.4	6.7	10.2	13.2

Plot a graph between V and I and calculate the resistance of the resistor.

33. (a) How many eggs are produced every month by either of the ovaries in a human female ? Where does fertilization take place in the female reproductive system ?

(b) What happens in case the eggs released by the ovary are not fertilized?

SECTION-D

Question no. 34 to 36 are Long answer questions.

34. Discuss the physical properties of non-metals.

or

Discuss the exceptions in the properties of metals and non-metals.

35. Suggest three contraceptive methods to control the size of human population. Mention two factors that determine the size of population.

or

How do the following organisms reproduce by asexual methods ?
(a)   Euglena
(b)   Spirogyra
(c)   Ginger
(d)   Chrysanthemum
(e)   Strawberry
(f)   Mango

36. A household uses the following electric appliances :
(i)   refrigerator of rating 400 W for 10 hours each day.
(ii)   two electric fans of rating 80 W each for 6 hours daily.
(iii)   six electric tubes of rating 18 W each for 6 hours daily.
Calculate the electricity bill for the household for month of June, if cost of electrical energy is ₹ 3.00 per unit.

SECTION-E

Question no. 37 to 39 are case-based/data-based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts.

37. Acids, bases and salts are three main categories of chemical compounds. These have certain definite properties which distinguish one class from the other.
The acids are sour in taste while bases are bitter in taste. Tasting a substance is not a good way of finding out if it is an acid or a base! Acids and bases can be better distinguished with the help of indicators. Indicators are substances that undergo a change of colour with a change of acidic, neutral or basic medium. Many of these indicators are derived from natural substances such as extracts from flower petals and barrier. Litmus, a purple dye is extracted from the lichen plant. Some indicators are prepared artificially. For example, methyl orange and phenolphthalein. Given below is a table of indicators and their colour change in acidic and basic medium.

Indicator	Colour in Acid	Colour in Alkali
Litmus	Red	Blue
Methyl	Pinkish red	Yellow
Phenolphthalein	Colourless	Pink

(i)   Give two examples each of natural and artificial indicators.
(ii)   An aqueous solution turns red litmus solution blue. Excess addition of which solution would reverse the change-ammonium hydroxide solution or hydrochloric acid?
(iii)   What will be the change in colour when a few drops of phenolphthalein is added to a solution having pH 8.5.

or

(iv)   What is universal indicator?

Continue on next page......

38. Questions are based on the two table given below. Study these tables related to blood pressure level and answer the question that follow :

Table-A

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (Upper number)	DIASTOLIC mm Hg (Lower number)
Normal	120	80
Elevated	120–129	Less than 80
High Blood Pressure (Hypertension) Stage 1	130–139	80–90
High Blood Pressure (Hypertension) Stage 2	140 or higher	90 or higher
Hypertensive crisis (consult your doctor immediately)	Higher than 180	Higher than 120

Table-B

Time of Measurement	Blood Pressure	
	Patient–X	Patient–Y
Morning	75–115	85–125
Afternoon	79–122	80–120
Evening	82–132	75–110

(i) In the table B, at which time patent–Y have ideal normal blood pressure ?

(ii) Identify the patient, which have hypertension stage-1 blood pressure ?

(iii) Which Diet is the best for high blood pressure patient ?

or

(iv) What is the ideal blood pressure measurement of a human ?

39. After coming from playground, Tanu feels very hungry. But still some more time was required by her mother to cook food. While waiting on dining table Tanu was playing with her spoon. All of sudden she observed two different orientations of her face when she looked her face from both sides of spoon.

She was confused why the orientation of her face changed in two cases. She was curious to know why her reflected image appears upside down in the one surface of a spoon but the correct way up in the opposite surface.

(i) Which type of image is formed on the both surface of spoon?

(ii) As tanu move concave surface of spoon towards her face, again she find that there comes a point (provided the spoon is big enough) where her image flips from inverted to upright. State the condition under which it happens ? Is this image real or virtual?

Continue on next page......

(iii)　The given ray diagram depict the correct explanation of the image formed by one surface of the spoon. Name the surface which can form the image as depicted in given ray diagram?
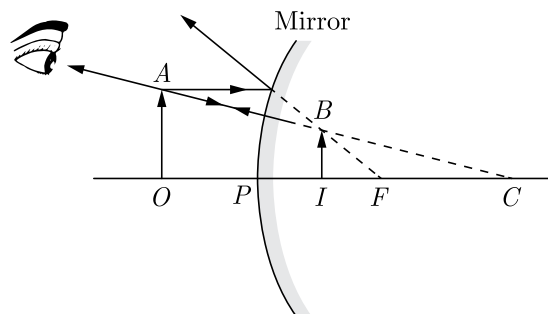
or

(iv)　Tanu was trying to form image using a concave mirror. She got an inverted and real image of same size of the object. Given figure shows four possible positions of the image formed. Figure out the correct position and justify it.
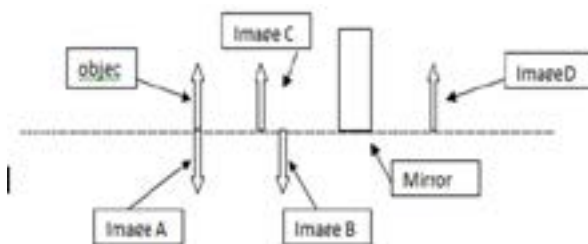
□□□□□□

Sample Paper 4

Class X 2023-24

Science (086)

Time: 3 Hours **Max. Marks: 80**

General Instructions:

1. This question paper consists of 39 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 Objective Type questions carrying 1 mark each.
4. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION-A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20.

1. The following figures show the path of light rays through three lenses marked L_1, L_2 and L_3 and their focal points F_1, F_2 and F_3 respectively.

(i)

(ii)

(iii)

F_3

L_3
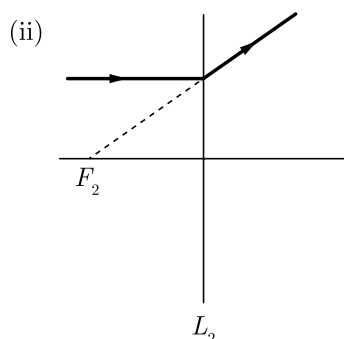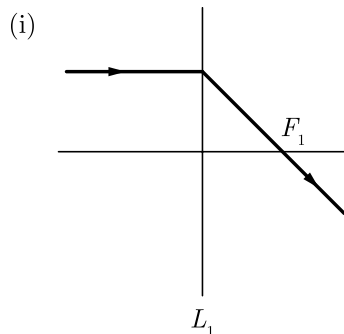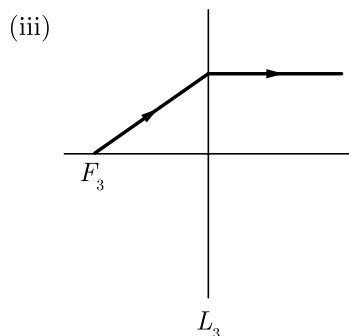
Which of the following diagram shows the concave lens properties?
(a)   (i)
(b)   (ii)
(c)   (iii)
(d)   (i), (ii)

2.   Which of the following phenomena contributes significantly to the reddish appearance of sun at sunrise or sunset?

(a)   Dispersion of light
(b)   Scattering of light
(c)   Total internal reflection of light
(d)   Reflection of light from the earth

3.   As light travels from a rarer to a denser medium it will have
(a)   increased velocity
(b)   decreased velocity
(c)   decreased wavelength
(d)   both (b) and (c)

4.   Refraction of light occurs because of change in velocity or speed of light in different media. When ray of light travels from rarer to denser medium, it moves towards the normal. When it travels from denser to rarer medium, it moves away from the normal. When light ray travels from rarer to denser medium. its velocity and wavelength both decrease. Which of the following statements is/are correct for litmus?
1.   Litmus solution is a purple dye.
2.   It is extracted from lichen.
3.   In neutral solution. it remains colourless.
(a)   1 and 2
(b)   2 and 3
(c)   1 and 3
(d)   1, 2 and 3

5. Which of the following are correctly matched?

1.	Bleaching powder	oxidising agent in chemical industries.
2.	Baking powder	a mixture of sodium hydrogen carbonate and a mild edible acid.
3.	Washing soda	remove permanent hardness of water.

(a)   1 and 2
(b)   2 and 3
(c)   1 and 3
(d)   1, 2 and 3

6.
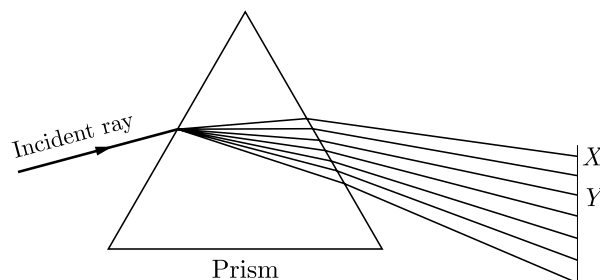
Dispersion of light by glass prism is shown in the above figure. Here x and y indicates .... and .... colour respectively.
(a)   red, blue
(b)   red, indigo
(c)   red, yellow
(d)   violet, green

7. Choose the incorrect statement about insulin which is shown in the figure:.

(a)   It is produced from pancreas.
(b)   It regulates growth and development of the body.
(c)   It regulates blood sugar level.
(d)   Insufficient secretion of insulin will cause diabetes.

8. Four chambered heart is characteristics feature of?
(a)   Fishes
(b)   Amphibians
(c)   Reptiles
(d)   Mammals

9.   The necessary conditions for combustion process to occur are


   1.   availability of air/oxygen.
   2.   availability or air/oxygen and fuel.
   3.   temperature of fuel below ignition temperature.
   4.   temperature of fuel above ignition temperature.
   Select the correct alternative.
   (a)   1 and 2
   (b)   2 and 4
   (c)   3 and 1
   (d)   4 and 1

10.   Translocation is the process in which plants deliver:
   (a)   minerals from leaves to other parts of the plant
   (b)   plant growth hormones from leaves to other parts of the plant
   (c)   water and organic substance from leaves to other parts of the plant
   (d)   all of the above

11.   Which of the following is not a chemical reaction?
   (a)   Souring of milk
   (b)   Dissolution of sugar in water
   (c)   Rusting of iron
   (d)   Digestion of food in the body

12.   Which of the following is the correct sequence of events of sexual reproduction in a flower?
   (a)   pollination, fertilisation, seedling, embryo
   (b)   seedling, embryo, fertilisation, pollination
   (c)   pollination, fertilisation, embryo, seedling
   (d)   embryo, seedling, pollination, fertilisation.

13.   Dissolution of sugar in water is a physical change. Physical changes are changes affecting the form of a chemical substance but not its chemical composition. $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$

   The above reaction is an example of a-
   (a)   combination reaction
   (b)   double displacement reaction
   (c)   decomposition reaction
   (d)   displacement reaction

14. The ability of metals to be drawn into thin wire is known as

   (a)   Ductility

   (b)   Malleability

   (c)   Sonority

   (d)   Conductivity

15. The two versions of a trait (character) which are brought in by the male and female gametes are situated on

   (a)   copies of the same chromosome

   (b)   two different chromosomes

   (c)   sex chromosomes

   (d)   any chromosome

16. A soap micelle is shown in th figure. In the soap micelles
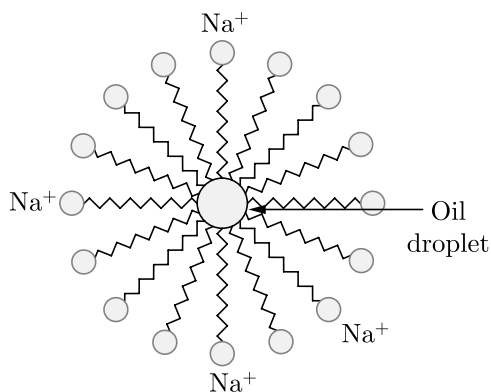
   (a)   The ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster.

   (b)   Ionic end of soap is in the interior of the cluster and carbon chain is out of the cluster.

   (c)   Both ionic end and carbon chain are in the interior of the cluster.

   (d)   Both ionic end and carbon chain are on the exterior of the cluster.

Question no. 17 to 20 are Assertion-Reasoning based questions.

17.   **Assertion :** Carbon dioxide turns lime water milky.

     Reason : Carbon dioxide sullies the water.

   (a)   Both Assertion and Reason are True and Reason is the correct explanation of the Assertion.

   (b)   Both Assertion and Reason are True but Reason is not the Correct explanation of the Assertion.

   (c)   Assertion is True but the Reason is False.

   (d)   Both Assertion and Reason are False.

18. **Assertion :** Phototropism is caused by auxin.
    Reason : When light is coming from one side of the plant, auxin diffuses towards the shady side of the shoot.
    (a)   Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
    (b)   Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
    (c)   Assertion (A) is true but reason (R) is false.
    (d)   Assertion (A) is false but reason (R) is true.

19. **Assertion :** Haemoglobin is not the respiratory pigment in human beings.
    Reason : It transports oxygen in the human body.
    (a)   Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
    (b)   Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
    (c)   Assertion is true but Reason is false.
    (d)   Assertion is false but Reason is true.

20. **Assertion :** A fuse wire is always connected in parallel with the mainline.
    Reason : If a current larger than the specified value flows through the circuit, fuse wire melts.
    (a)   Both Assertion and Reason are true and Reason is correct explanation of the assertion.
    (b)   Both Assertion and Reason are true but Reason is not the correct explanation of the assertion.
    (c)   Assertion is true but Reason is false.
    (d)   Assertion is false but Reason is true.

SECTION-B

**Question no. 21 to 26 are very short answer questions.**

21. When a metal X is treated with cold water, it gives a base Y with molecular formula XOH (Molecular mass $= 40$) and liberates a gas Z which easily catches fire. Identify X, Y and Z and also write the reaction involved.
    or
    What are the constituents of solder alloy ? Which property of solder makes it suitable for welding electrical wires ?

22. On touching a hot plate, you suddenly withdraw your hand. Which category of neurons became active first and which one next ?

23. During crossing why do new features which are not present in the parents appear in the offspring.

24. Are the two cells formed in reproduction are identical?

25. What are the properties of the image formed by a plane mirror ?
    or
    How do we distinguish a medium to be rarer or denser?

26. What would happen if all the decomposers were eliminated from the earth ? Explain.

SECTION-C

Question no. 27 to 33 are short answer questions.

27. Write the chemical formula and name of the compound which is the active ingredient of all alcoholic drinks. List its two uses. Write chemical equation and name of the product formed when this compound reacts with-
    (i)   sodium metal
    (ii)   hot concentrated sulphuric acid

28. Study the figure given below and answer the following questions :
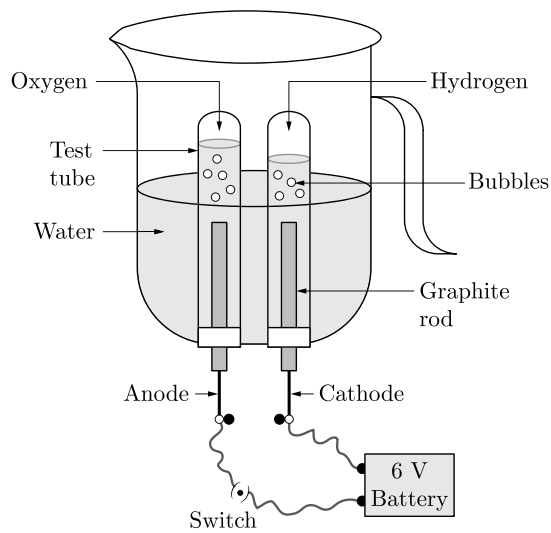
(a)   Name the process depicted in the diagram.
(b)   Write the composition of the anode and the cathode.
(c)   Write the balanced chemical equation of the reaction taking place in this case.

29. (a)   What is the role of autosomes ?
(b)   Why is it that offspring receives traits from both the parents.

or

In one of his experiments with pea plants, Mendel observed that when a pure tall pea plant is crossed with a pure dwarf pea plant in the first generation, F_1 only tall plants appear.
(a)   What happens to the traits of the dwarf plants in this case?
(b)   When the F_1 generation plants were self-fertilised, he observed that in the plants of second generation, F_2 both tall plants and dwarf plants were present. Why it happened? Explain briefly.

30. The apparent altitude of stars appears to be generally more than their true altitudes. Explain, how.
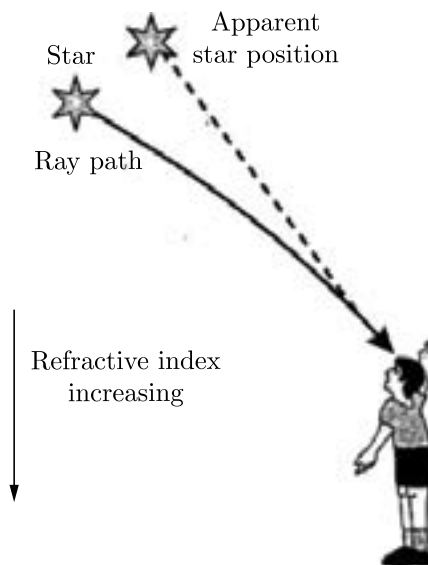
31. What are the causes of the following defects of vision and how can they be corrected ?
(a)   Cataract
(b)   Presbyopia.

32. Calculate the total cost of running the following electrical devices in the month of September, if the rate of 1 unit of electricity is ` 6.00.
(i)   Electric heater of 1000 W for 5 hours daily.
(ii)   Electric refrigerator of 400 W for 10 hours daily.

<div align="center">**or**</div>

(a)   List the factors on which the resistance of a conductor in the shape of wire depends.
(b)   Why are metals good conductors of electricity whereas glass is a bad conductor of electricity? Give reason.
(c)   Why are alloys commonly used in electrical heating devices? Give reason.

33. Write one main difference between asexual and sexual mode of reproduction. Which species is likely to have comparatively better chances of survival—the one reproducing asexually or the one reproducing sexually? Give reasons to justify your answer.

SECTION-D

Question no. 34 to 36 are Long answer questions.

34. (a)   All ores are minerals but all minerals are not ores. Justify the statement.
(b)   What is galvanisation ?
(c)   Explain roasting with the help of a reaction.
(d)   What do you mean by amalgam ?
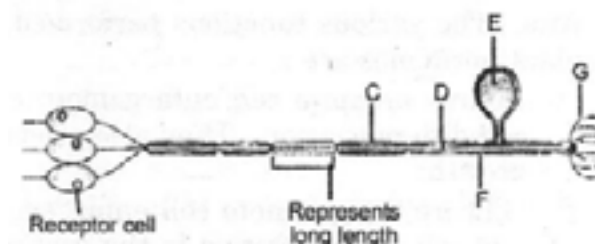
<div align="center">**or**</div>

What are alloys ? How are they made ? Name the constituents and uses of brass, bronze and solder.

35. What is 'phototropism'? How does it occur in plants? Describe an activity to demonstrate phototropism.

<div align="center">**or**</div>

Name the parts C to G on the diagram of a sensory neuron given here. State two ways in which this neuron differs from a motor neuron.
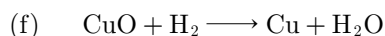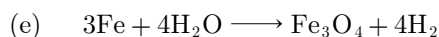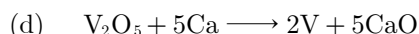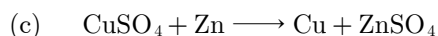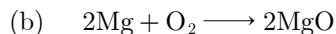

36. (a)   Derive the relation for the equivalent resistance when three resistors of resistances R_1, R_2 and R_3 are connected in parallel.
(b)   Find the minimum resistance that can be made using four resistors, each of $20\,\Omega$.

SECTION-E

Question no. 37 to 39 are case-based/data-based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts.

37. Oxidation is the process of gaining of oxygen or losing of hydrogen. Reduction is the process of losing of oxygen or gaining of hydrogen. The substance which undergoes oxidation is the reducing agent while the substance which undergoes reduction is known as the oxidising agent. Oxidation and reduction always take place together and these type of reactions are known as redox reactions. Some of the examples of redox reactions are given below :

   (a) $Pb_3O_4 + 8HCl \longrightarrow 3PbCl_2 + Cl_2 + 4H_2O$

   (b) $2Mg + O_2 \longrightarrow 2MgO$

   (c) $CuSO_4 + Zn \longrightarrow Cu + ZnSO_4$

   (d) $V_2O_5 + 5Ca \longrightarrow 2V + 5CaO$

   (e) $3Fe + 4H_2O \longrightarrow Fe_3O_4 + 4H_2$

   (f) $CuO + H_2 \longrightarrow Cu + H_2O$

   (i) Give two examples of oxidation reaction from your everyday life.
   (ii) Write the oxidising agent in the reaction a and b.

   or

   (iii) Out of oxidation and reduction, which reaction takes place at anode?

38. Answer given questions on the basis of your understanding of the following paragraph and the related studies concepts.

    To make a bread dough, a baker mixes flour, sugar and baking powder (mixture of baking soda and tartaric acid). After mixing all the ingredients, the dough is placed in a container for a few hours (in an oven). On heating, the mixture releases carbon dioxide gas leaving bubbles behind. This increases the size of the bread and makes it soft and spongy. Tartaric acid helps in removing bitter taste.
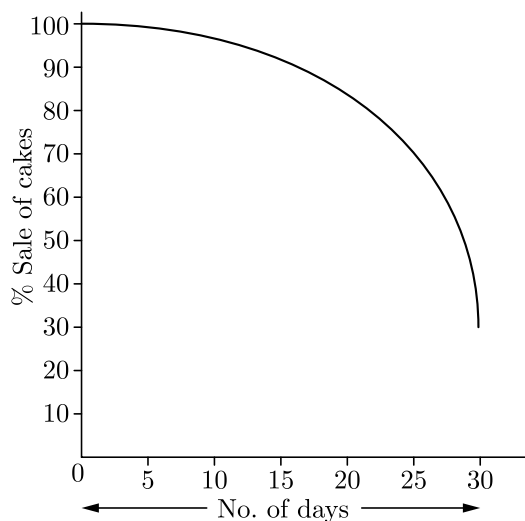
    (i) Why does the bread dough rise?
    (ii) 'Yeast can be used in place of baking powder for making bread dough'. What is yeast?
    (iii) What would you use to measure pH of baking powder?

    or

    (iv) Based on the graph represented alongside, answer the following questions:
    A bakery shop started using baking soda instead of baking powder for baking cakes. What could be the reason for the decrease in the sale of cakes?

39. White light is a mixture of seven colours i.e., violet, indigo, blue, green, yellow, orange and red. Every colour has its own characteristic wavelength. Different colours with their wavelengths are given below in the table.

S. No.	Colour	Wavelength
1.	Red	7900 Å
2.	Orange	6000 Å
3.	Yellow	5800 Å
4.	Green	5400 Å
5.	Blue	4800 Å
6.	Indigo	4500 Å
7.	Violet	4000 Å

The phenomenon of splitting white light into seven colours when it passes through a glass prism is called dispersion of white light.

(i)   Name the phenomenon occurring in nature due to dispersion of light.

(ii)   What is monochromatic light?

(iii)   Light of two colours 'A' and 'B' pass through a glass prism. 'A' deviates more than 'B' from its path of incidence. Which colour has a higher speed in the prism ?

or

(iv)   On which factor speed of light depends ?

□□□□□□□

Sample Paper 2
Class XII 2023-24
Chemistry

Time: 3 Hours   **Max. Marks: 70**

General Instructions:
1. There are 33 questions in this question paper with internal choice.
2. SECTION A consists of 16 multiple-choice questions carrying 1 mark each.
3. SECTION B consists of 5 very short answer questions carrying 2 marks each.
4. SECTION C consists of 7 short answer questions carrying 3 marks each.
5. SECTION D consists of 2 case-based questions carrying 4 marks each.
6. SECTION E consists of 3 long answer questions carrying 5 marks each.
7. All questions are compulsory.
8. Use of log tables and calculators is not allowed.

SECTION-A

Directions (Q. Nos. 1-16) : The following questions are multiple-choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.

1. Acetic acid reacts with hydrazoic acid at $0°$ in the presence of conc. H_2SO_4 to give:
   (a) methyl amine   (b) methyl cyanide
   (c) ethylamine   (d) methane

2. Osmotic pressure of a solution is 0.0821 atm at a temperature of 300 K. The Concentration in moles/lit. will be:
   (a) 0.3×10^{-2} (b) 3
   (c) 0.33   (d) 0.666

3. When nitrobenzene is reduced in neutral medium, the product is:
   (a) C_6H_5NHOH (b) C_6H_5NH2
   (c) p-aminophenol   (d) azobenzene

4. The rate constant for the reaction, $A + 2B \longrightarrow$ product is expressed by $R = [A][8]^2$ The order of reaction will be:
   (a) 6   (b) 5
   (c) 2   (d) 3

5. Consider the following graph between molar conductivity (Λ_m) and $\sqrt{c}$
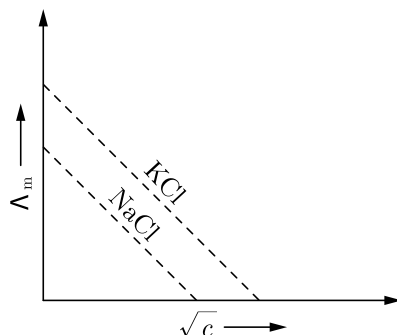
What do you infer about NaCl and KCl from the graph?
(a) NaCI and KCl are strong electrolytes
(b) Na^+ (aq.) has less conductance than $K^+(aq)$ due to less hydration
(c) NaCl and KCl are weak electrolytes
(d) Na^+ (aq.) has more conductance than $K^+(aq)$

6. Which of the following graphs represents exothermic reaction?

(i)

(ii)

(iii)
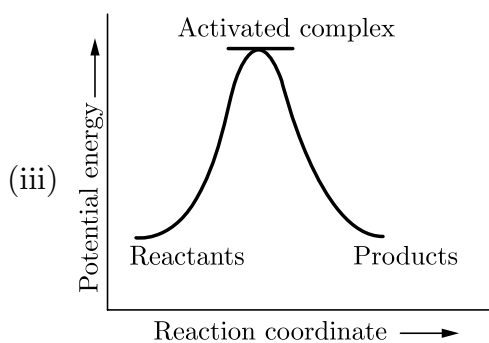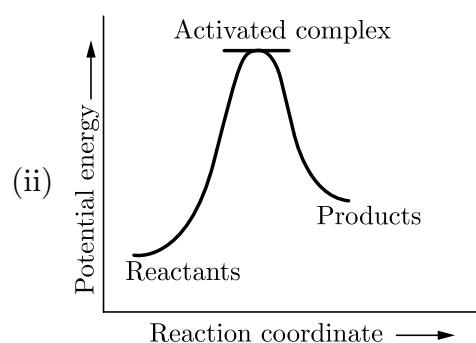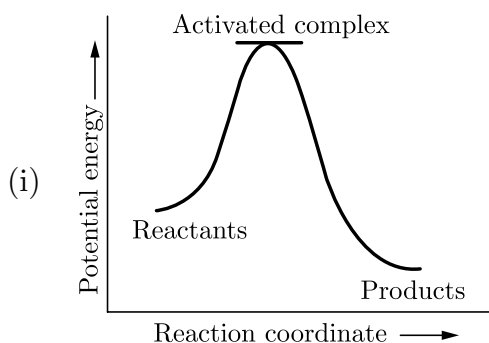
(a) (ii) only   (b) (i) only
(c) (iii) only   (d) (i) and (ii)

7. In which of the following ions, number of unpaired electron is zero?
(a) $Fe^{++}(Z=26)$ (b) $Cr^{++}(Z=24)$
(c) $Zn^{++}(Z=30)$ (d) $Cu^{++}(Z=29)$

8. Phenol does not undergo nucleophilic substitution reaction easily due to:
    (a) instability of phenoxide ion
    (b) acidic nature of phenol
    (c) partial double bond character of C—OH bond
    (d) partial double bond character of C—C bond

9. The time required for the half-completion ($t_{1/2}$) of a first order reaction is:
    (a) independent of its initial concentration
    (b) dependent on square root of its initial concentration
    (c) dependent on its initial concentration
    (d) inversely proportional to its initial concentration

10. Which of the following isomer has the highest melting point?
    (a) 1, 4-dichlorobenzene
    (b) 1, 2-dichlorobenzene
    (c) 1, 3-dichlorobenzene
    (d) All isomers have same melting points

11. Why is $[Ni(CN)_4]^{2-}$ diamagnetic while $[NiCl_4]^{2-}$ is paramagnetic in nature:
    (a) In $[Ni(CN)_4]^{2-}$, no unpaired electrons are present while in $[NiCl_4]^{2-}$ two unpaired electrons are present.
    (b) $[NiCl_4]^{2-}$ shows sp^2 hybridisation, hence it is paramagnetic.
    (c) $[Ni(CN_4)]^{2-}$ shows sp^3 hybridisation, hence it is diamagnetic.
    (d) In $[NiCl_4]^{2-}$, no unpaired electrons are present while in $[Ni(CN)_4]^2$ two unpaired electrons are present.

12. Which one of the following is formed by Gabriel phthalimide reaction?
    (a) Tertiary amine   (b) Primary aromatic amine
    (c) Primary aliphatic amine   (d) Secondary amine

Directions (Q. Nos. 13-16) : Each of the following questions consists of two statements, one is Assertion and the other is Reason. Give answer :

13. **Assertion :** Separation of Zr and Hf is difficult.
     Reason : Because Zr and Hf lie in the same group of the periodic table.
    (a) Both Assertion and Reason are true but Reason not the correct explanation of Assertion.
    (b) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
    (c) Assertion is false but Reason is true.
    (d) Assertion is true but Reason is false.

14. **Assertion :** All naturally occurring α-amino acids except glycine are optically active.
    Reason : Most naturally occurring amino acids have L-configuration.
    (a)   Both Assertion and Reason are true but Reason not the correct explanation of Assertion.
    (b)   Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
    (c)   Assertion is false but Reason is true.
    (d)   Assertion is true but Reason is false.

15. **Assertion :** N, N-Diethylbenzene sulphonamide is insoluble in alkali.
    Reason: Sulphonyl group attached to nitrogen atom is strong electron withdrawing group.
    (a)   Both Assertion and Reason are true but Reason not the correct explanation of Assertion.
    (b)   Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
    (c)   Assertion is false but Reason is true.
    (d)   Assertion is true but Reason is false.

16. **Assertion :** Alcohols have higher boiling Points than ethers of comparable molecular masses
    Reason: Alcohols and ethers are isomeric in nature
    (a)   Both Assertion and Reason are true but Reason not the correct explanation of Assertion.
    (b)   Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
    (c)   Assertion is false but Reason is true.
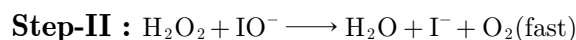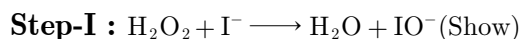   (d)   Assertion is true but Reason is false.

SECTION-B

Directions (Q. Nos. 17-21) : This section contains 5 questions with internal choice in one question. The following questions are very short answer type and carry 2 marks each.

17. Define molar conductivity for the solution of an electrolyte. How does it vary with concentration?

18. Consider the decomposition of hydrogen peroxide in alkaline medium which is catalysed by iodide ions.

    $$2H_2O_2 \xrightarrow{\text{OH}^-} 2H_2O + O_2$$
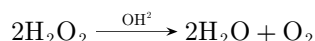
    This reaction takes place in two steps as given below :

    Step-I : $H_2O_2 + I^- \longrightarrow H_2O + IO^- \text{(Show)}$

    Step-II : $H_2O_2 + IO^- \longrightarrow H_2O + I^- + O_2 \text{(fast)}$

    (i)   Write the rate law expression and determine the order of reaction w.r.t. H_2O_2
    (ii) What is the molecularity of each individual step?

19. Glucose and sucrose are soluble in water but cyclohexane and benzene (simple six membered ring compounds) are insoluble in water. Explain.

or

What type of bonding helps in stabilising the α-helix structure of proteins? Explain

20. CH_3CHO is more reactive than CH_3COCH_3 towards reaction with HCN. Why?

21. Write the IUPAC name and geometrical isomer of $[Pt(NH_3)_2Cl_2]$.

SECTION-C

Directions (Q. Nos. 22-28) : This section contains 7 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.

22. Arrange each set of compounds in order of increasing boiling points:
   (i)   Bromomethane, bromoform, chloromethane, dibromomethane

   (ii)   1-Chloropropane, isopropylchloride, 1-chlorobutane.

23. Analyse the given graph, drawn between concentration of reactant vs time.
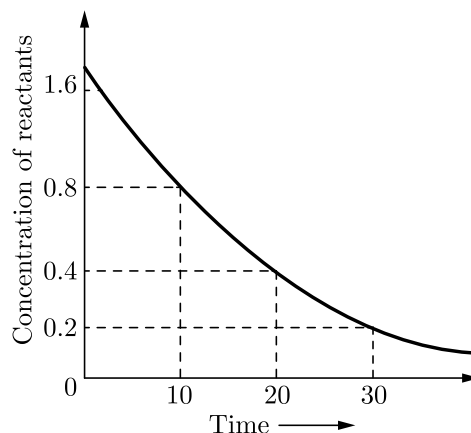
   (i)   Predict the order of reaction.
   (ii)   Theoretically, can the concentration of the reactant reduce to zero after infinite time? Explain.

24. Answer the following questions:(Any three)
   (i)   Why is the vapour pressure of an aqueous solution of glucose lower than that of water?

   (ii)   What is semi-permeable membrane?

   (iii) Why do gases always tend to be less soluble in liquids as the temperature is raised?

   (iv)   How does sprinkling of salt help in clearing the snow covered roads in hilly areas? Explain the phenomenon involved in the process.

25. (i) What is diazonium salt?

(ii) Write the chemical reaction of preparation of chlorobenzene from benzene diazonium chloride.

26. Determine the structure and magnetic behaviour of $[Fe(CN)_6]^{4-}$ ion on the basis of valence bond theory.

27. Write structure of compounds A, B and C in each of the following reactions:

(i) $C_6H_5Br \xrightarrow{\text{Mg/dry ether}} A \xrightarrow[\text{(b) H}_3\text{O}^+]{\text{(a) CO}_2(g)} B \xrightarrow{PCl_5} C$

(ii) $CH_3CN \xrightarrow[\text{(b) H}_3\text{O}^+]{\text{(a) SnCl}_2/\text{HCl}} A \xrightarrow{\text{dil. NaOH}} B \xrightarrow{\Delta} C$

28. (i) Define the following terms:

(a) Enantiomers

(b) Racemic mixture

(ii) Why is chlorobenzene resistant to nucleophilic substitution reaction?

SECTION-D

Directions (Q. Nos. 29-30) : The following questions are case-based questions. Each question has an internal choice and carries 4 marks each. Read the passage carefully and answer the questions that follow.

29. The four colligative properties of the dilute solutions help in calculating the molecular mass of the solute which is often called observed molecular mass. It may be same as the theoretical molecular mass (calculated from the molecular formula) if the solute behaves normally in solution. In case, it undergoes association or dissociation, the observed molar mass gives different results. The nature of the solute in solution is expressed in terms of van't Hoff factor (i) which may be 1 (if the solute behaves normally), less than 1 (if the solute associates) and more than 1 (if the solute dissociates). The extent of association or dissociation is represented by cc which is:

$a = \dfrac{i-1}{(1/n-1)}$ or $\dfrac{i-1}{n-1}$ (for dissociation)

(for association)

Based on the above passage, answer the following questions :

(i) What is common in all the four colligative properties?

(ii) What is the expected value of van't Hoff factor for $K_4[Fe(CN)_6]$ when it completely dissociates in water?

(iii) What is the value of van't Hoff factor for a dilute solution of K_2SO_4 in water?

or

(iv) In the determination of molar mass of A^+B using colligative property, what will be the van't Hoff factor if the solute is 40% dissociated?

30. Polysaccharides may be very large molecules. Starch, glycogen, cellulose, and chitin are examples of polysaccharides.

Starch is the stored form of sugars in plants and is made up of amylose and amylopectin (both polymers of glucose). Amylose is soluble in water and can be hydrolyzed into glucose units breaking glycosidic bonds, by the enzymes a-amylase and β-amylase. It is straight chain polymer. β-mylopectin is a branched chain polymer of several D-glucose molecules. 80% of amylopectin is present in starch. Plants are able to synthesize glucose, and the excess glucose is stored as starch in different plant parts, including roots and seeds. The starch that is consumed by animals is broken down into smaller molecules, such as glucose.

The cells can then absorb the glucose. Glycogen is the storage form of glucose in humans and other vertebrates, and is made up of monomers of glucose. It is structurally quite similar to amylopectin. Glycogen is the animal equivalent of starch. It is stored in liver and skeletal muscles.

Cellulose is one of the most abundant natural biopolymers. The cell walls of plants are mostly made of cellulose, which provides structural support to the cell. Wood and paper are mostly cellulosic in nature.

Like amylose, cellulose is a linear polymer of glucose. Cellulose is made up of glucose monomers that are linked by bonds between particular carbon atoms in the glucose molecule. Every other glucose monomer in cellulose is flipped over and packed tightly as extended long chains. This gives cellulose its rigidity and high tensile strength—which is so important to plant cells. Cellulose passing through our digestive system is called dietary fiber.

Based on the above passage, answer the following questions:

(i) Glycogen is a kind of polysaccharide and is the storage form of glucose present in humans and other vertebrates. It is the animal equivalent of starch but can you say where is it stored in animals?

(ii) What can you infer about the characteristic of amylose from the passage?

(iii) Whenever glucose levels drop in our body, a bipolymer breaks down to release glucose. Name this bipolymer and it is structurally similar to which polymer?

or

(iv) Which polymer is important to plant cells? How?

Section-E

Directions (Q. Nos. 31-33) : The following questions are long answer type and carry 5 marks each. Two questions have an internal choice.
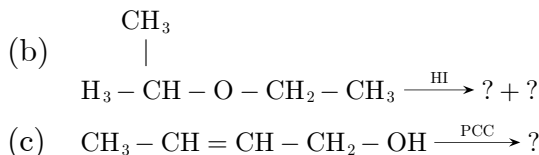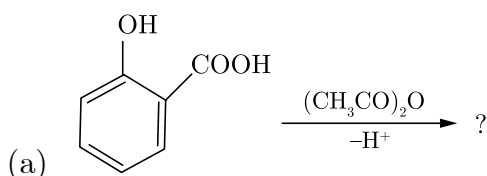
31. (i) Write down complete equation for the following reactions:

(a) Oxidation of Fee' by 0.203- in acidic medium.

(b) Oxidation of 5203- by $KMnO_4$ (aq) neutral.

(c) Decomposition of oxalate in the presence of $KMnO_4$ in acidic medium.

   (ii) Compare the chemistry of actinoids with that of the lanthanoids with special reference to :

      (a) Electronic configuration.   (b) Atomic and ionic sizes.

      (c) Oxidation state.   (d) Chemical reactivity.

32. (i)   Give the mechanism for the formation of ethanol from ethene.

    (ii) Predict the reagent for carrying out the following conversions:

      (a)   Phenol to benzoquinone.

      (b)   Anisole to p-bromoanisole.

      (c)   Phenol to 2, 4, 6-tribromophenol.

or

(i) Write the product(s) in the following reactions:

(a)

OH

$\diagdown$COOH

$\xrightarrow[-H^+]{(CH_3CO)_2O}$?

(b)
$$\underset{\substack{| \\ H_3-CH-O-CH_2-CH_3}}{CH_3} \xrightarrow{HI} ?+?$$

(c) $CH_3-CH=CH-CH_2-OH \xrightarrow{PCC} ?$

    (ii) Give simple chemical tests to distinguish between the following pairs of compounds:

      (a)   Ethanol and Phenol.

      (b)   Propanol and 2-methylpropan-2-ol.

33. (i)   For the reaction:

$2AgCl(s) + H_2(g)(1\,atm) \longrightarrow 2Ag(s) + 2H^+$

$(0.1M) + 2Cl^-(0.1M), \Delta G° = -43600\,J$ at 25°C.

Calculate the emf of the cell. $[Log10^{-n} = -n]$

    (ii) Define fuel cell and write its two advantages.

or

(i)   Out of the following pairs, predict with reason which pair will allow greater conduction of electricity:

    (a)   Silver wire at 30°C or silver wire at 60°C.

    (b)   0.1 M CH_3COOH solution or 1 M CH_3COOH solution.

    (c)   KG solution at 20°C or KCl solution at 50°C.

(ii) Give two points of differences between electrochemical and electrolytic cells.

□□□□□□□

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AUTUMN BREAK (2023-24)

SUBJECT:MATHS

CLASS:XI

</div>

CHAPTER:1

Exercise:1.1

Question No.5,3

Exercise:1.2

Question No. 5

Exercise:1.3

Question No.8

Exercise:1.4

Question No.6

Exercise:1.5

Question No.4

CHAPTER:2

Exercise:2.1

Question No.1,7

Exercise:2.2

Question No. 6,7

Exercise:2.3

Question No.6,10

CHAPTER:6

Exercise:6.3

Question No.10,11,4,5

Exercise:6.4

Question No.3,4

Example:20,21,22,23,24

CHAPTER:7

Exercise:7.1

Question No.6,11,12,14

Example:3,4

GAUTAM KUMAR GUPTA

P.G.T (MATHS)

AUTUMN BREAK (2023-24)

SUBJECT: MATHS

CLASS:12(A)

(1) Integration:

*Indefinite Integration/Definite Integration

(i)Exercise:7.1

　Question No. 21,22

　Example:6

(ii)Exercise:7.2

　Question No. 34,26

(iii)Exercise:7.3

　Question No. 13,19,22

(iv)Exercise:7.5

　Question No. 15,16,17,18,21

　Example:22

(v)Exercise:7.6

　Question No. 17,18

(vi)Exercise:7.9

　Question No. 9,10

　Example:30,34

(vii)Exercise:7.10

　Question No.10,12,15,16,17

　Example:38,39,40,41,42

*Miscellaneous Chapter:7

　Question No.18,19,23,29,31

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P.G.T(MATHS)

AUTUMN BREAK (2023-24)

SUBJECT: MATHS

CLASS: 9 (A,B)

CHAPTER:7

(1) Exercise:7.1

Question No. 2,5,6,7,8

(2) Exercise:7.2

Question No. 3,4,5,6

(3) Example No. 4,5,6,7,8

(4) Exercise:7.3

Question No. 1,3

CHAPTER:8

(1) Example No. 3,4,5

(2) Exercise:8.1

Question No. 3,5,6,7

(3) Exercise:8.2

Question No. 4,5

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