

11th Chemistry Public Exam

Chemistry PUBLIC EXAM - 2024
Centum marks Task Questions - 1 - unit 1
Important 2,3 Mark Questions:

- 1) சமீப காலம் வரையில்/define Relative atomic mass. %
- 2) சமீப காலம் வரையில்/ Define Equivalent mass
- 3) மோலார்: (a) வரையில்/define: (a) Mole
(b) Avogadro Number
- 4) ஆக்சிசனாக்கம்/ Oxidation
- 5) கலக்கல்/ Calculations
- 6) மோலார் நிறை/ Molar mass
- 7) மோலார்: (a) மோலார் நிறை (b) மோலார் கன அளவு
Define: (a) Molar mass (b) Molar volume.
- 8) 100% Marks Qns

70
70

Most Expected

2,3,5 Marks

Unit Wise Qns

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Chemistry Public Exam - 2024Centum marks Task Questions - 1 - unit 1Important 2,3 Mark Questions:

- ① ஒப்பு அல்லது நிறுவு உரைப்பது / Define Relative atomic mass. %
- ② சமமான நிறுவு உரைப்பது / Define Equivalent mass
- ③ உரைப்பது: (அ) மோல் (ஆ) ஆக்ஸிஜனேற்ற எண் / Define: (a) mole (b) Avogadro Number / அம்காட்டிரா எண் (ஆ) oxidation number %
- ④ ஆக்ஸிஜனேற்றம், ஆக்சிடு வேறுபடுத்தல்: / Distinguish between Oxidation and Reduction. %
- ⑤ Calculate the molar mass of the following / கீழ்க்கண்டவற்றின் மோலார் நிறுவுகளைக் கண்டு. (i) யூரீயா / urea. %
(ii) அசிட்டோன் / Acetone (iii) போரிக் அமிலம் / Boric acid
(iv) கந்திக் அமிலம் / Sulphuric acid.
- ⑥ வேறுபாடு நிறுவுக, மோலார் நிறுவுக கிடைப்பதற்கு வேறுபாடு? / What is the difference between molecular mass and molar mass? - யாது?
- ⑦ உரைப்பது: (அ) மோலார் நிறுவு (ஆ) மோலார் கன அளவு / Define: (a) Molar mass (b) Molar volume.
- ⑧ வினைத்தொடர்புபட்ட கருவி என்ன? / What are the limiting reagent and excess reagent.
- ⑨ ஆக்ஸிஜனேற்ற எண்ணைக் கண்டுபிடிப்பதற்கு விதி என்ன? / What are the rules for finding oxidation Number?
- ⑩ மூல உருவமைப்பை எவ்வாறு உருவாக்க வேண்டும்? / How to write the empirical formula? Ans: 38
(i) எதிர்ப் உருவாக்கம் (C₆H₁₂O₆) (Empirical formula)
(ii) எதிர்ப் மூலம் குறையுள்ள உருவாக்கம் (C₈H₁₀N₄O₂)

Important 5 Mark Questions:

- ① Oxidation Number method (Balancing Equation)
அக்சிஜன எண்ணு முறை சமன்பாடு சமன் செய்வதில் பயன்படுகிறது.
(Book back Qn: 44 TM) ✖
- ② Ion Electron method (Balancing Equation)
அயனாமிலாசை முறை சமன்பாடு சமன் செய்வதில் பயன்படுகிறது.
(Book back Qn: 45 TM) ✖
- ③ Explain the Types of Redox Reactions / அக்சிஜன எண்ணு -
உட்க்க உலகாசைகள் உலகாசை உலகாசை: ✖ (Book in Qns)
- ④ Write a note on Competitive electron transfer reactions:
அக்சிஜனாமிலாசை உலகாசை உலகாசை உலகாசை: ✖

Important Calculations: 2M, 3M, 5M.

- ① Book back Qn: (Molar mass calculations) / மோலார் நிறை கணக்கீடுகள்
(37) i, ii, iii, iv.
Book in Qns: i) glucose ($C_6H_{12}O_6$) ii) Ethanol (C_2H_5OH)
iii) $KMnO_4$ iv) $K_2Cr_2O_7$ v) $C_{12}H_{22}O_{11}$.
- ② (Empirical formula calculation) / அநுபாது உலகாசை கணக்கீடு.
Book back Qn: (38) i, ii, (42)
Book in Qns: Example: (1), (2) 1.6.2. கணக்கீடு ✖.
Self Evaluation^{Qn} / தன் மதிப்பீடு: (5) ✖ (6) ✖.
- ③ Stoichiometry calculation / உலகாசை உலகாசை கணக்கீடு.
1.7.1. கணக்கீடுகள்: (1), (2), (5)
- ④ Molecular Formula calculation / மோலார் நிறை கணக்கீடு.
Book Back Qn: (42), (43) ✖. Self Evaluation: Qn: 6, Ex: 1.6.2

XI-CHEMISTRY IMPORTANT QUESTIONS – 2022-23
LESSON-1 BASIC CONCEPT OF CHEMICAL CALCULATIONS

2 & 3 MARKS

- 5 ① Define the term mole. (6)
2. Define equivalent mass. (8)
3. Define- Oxidation number. (20)
4. Distinguish between oxidation and reduction. (19, 20)
5. Define – Equivalent mass of an acid and base. (9)
6. Define – Molar mass and molar volume. (8)
7. What are limiting reagent and excess reagent? (17)
8. What is empirical formula and molecular formula? (10)
9. Define – Avogadro number. (70)
10. Oxidation number calculations. (21)
11. Stoichiometric calculations. (15, 16)
12. What is the difference between molecular mass and molar mass. (4)

5 MARKS

- 3 ⑬ Empirical formula and molecular formula calculations. (11, 12)
14. Write note on competitive electron transfer reaction. (26)
15. Explain types of redox reaction. (22)
16. Oxidation number method. (Balancing equation) (25)
17. Ion electron method (balancing equation) (26)

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Chemistry Public Exam certain Marks

Task Questions: 2 IM, EM Qns:

- ① பீர்ஸ் மாதிரி அணுவின் பரமிதரவன் கொள்கைகள் / What are the limitations of Bohr's model? *
- ② ஹைசன்பர்க்கின் திடீர்மவன் கொள்கை / State Heisenberg's Uncertainty principle. *
- ③ $n=4$ க்கு சாத்தியமான ஆற்றிடல்களின் எண்ணிக்கையை குறிப்பிடுக / How many orbitals are possible for $n=4$?
- ④ பௌலி அகற்றல் தத்துவத்தை கூறுக / State and Explain Pauli's Exclusion principle. *
- ⑤ ஆஃபா தத்துவத்தை விரிவிடுக / Describe Aufbau principle. *
- ⑥ ஹாந்த் விதி வழியை / State - Hand's Rule. *
- ⑦ டி-ப்ரோக்ளே சமன்பாட்டை உருவாக்கு / Derive De-Broglie Equation. *
- ⑧ ஆற்றிடலின் வழியை $3p_x$ மற்றும் $4d_{x^2-y^2}$ ஆற்றிடலின் எண் எடுக்கப்படுக n மற்றும் l மதிப்புகளைக் கூறுக / Define: Orbital? What are n and l value for $3p_x$ and $4d_{x^2-y^2}$ electron?
- ⑨ Mn^{2+} மற்றும் Cr^{3+} and " Cr மற்றும் Cu " அணுவின் எலக்ட்ரான் அமைப்புகளை எழுதி / Give the electronic Configuration of Mn^{2+} and Cr^{3+} also Cr and Cu . *

- (10) Ni^{2+} அல்லது Fe^{3+} எந்த நிலைப்புத் திணிமையுடைய எலக்ட்ரான் அமைப்பை ஏற்படுத்தும்? எது? / which has the stable electronic configuration Ni^{2+} or Fe^{3+} ?
- (11) Fe^{3+} ($Z=26$), Mn^{2+} ($Z=25$) மற்றும் அர்கான் ($Z=18$) எந்தவற்றின் சிறிய மதிப்பின் காணப்படும் தனித்த எலக்ட்ரான் - களின் எண்ணிக்கையைக் காண்க. / How many unpaired electrons are present in the ground state of Fe^{3+} ($Z=26$), Mn^{2+} ($Z=25$) and argon ($Z=18$)?
- (12) (a) ழீமான் விளைவு (b) ஸ்டார்க் விளைவு - வரை / Define: (a) Zeeman Effect, (b) Stark effect. *
- (13) காலத்தைச் சார்ந்து எல்லா நேரங்களிலும் அமைக்கக்கூடிய சமன்பாடு விவரிக்க. / Explain briefly the time independent Schrodinger wave equation. *
- (14) 2s, 4p, 5d and 4f ஆற்றல் மட்டங்கள் காணப்படும் ஆற்றல் மட்டம் காணும் கணக்களின் எண்ணிக்கையைக் காண்க. / How many radial nodes for 2s, 4p, 5d and 4f orbital exhibit? How many angular nodes?
- (15) Book Back Qns: Refer no: 30, 37, 38, 47, 48, 51
- (16) பரிமாற்ற ஆற்றல் என்ன? / What is exchange energy?

Important 5 Marks Ans:

- ① எழுதின அணுவின் கோட்பாடுகளை எழுதின: ✖
Write the postulates of Bohr's model of an atom.
- ② What are Quantum Numbers? Explain the types of quantum numbers ✖
குவாண்டம் எண்ணின் எண்ணின் எண்ணின் எண்ணின் எண்ணின் எண்ணின் உணககளை எழுதின: ✖
குவாண்டம் எண்ணின் எண்ணின் உணககளை எழுதின: ✖
- ③ ~~குவாண்டம் எண்ணின் உணககளை எழுதின: ✖~~
~~குவாண்டம் எண்ணின் உணககளை எழுதின: ✖~~
அணுவின் குவாண்டம் இயக்கவியல் மாதிரியை முக்கியக் (B.In) உணககளைக் கூறுக. / list out the important features of quantum mechanical model of atom by schrodinger equation.
- ④ ஈர்ப்புடைய மீதும் முழுமும் நிரப்பப்பட்ட அணுவின் நிலையத் தன்மை எந்த அளவுக்கு? Explain the stability of half filled and completely filled orbitals with examples. (Book in Ans)
- ⑤ அணுவின் மீதும் உணககளை எழுதின: ✖ / Explain the shapes of orbitals. ✖ (Book in Ans)

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Important 2, 3 Mark Questions:

1. State modern periodic law. %
2. What are isoelectronic ions? %
3. What is effective nuclear charge? %
4. What is screening effect? %
5. Define - electronegativity. %
6. Define - electron affinity.
7. Define - Ionisation enthalpy.
8. Define - Ionic / atomic radius. %
9. Explain diagonal relationship. %
10. Give the general electronic configuration of lanthanoids and actinoids.
11. Explain the calculation of Pauling's scale of electronegativity. %

5 Marks missing Qns: (1) Explain the factors affecting Ionisation Energy
(2) Explain the factors affecting Electronegativity.

12. Ionisation energy of 'N' is greater than that of 'O'. why? *
13. Calculate the effective nuclear charge of 4s electron in Scandium atom.
14. Ionization energy value of Beryllium atom is greater than that of Boron. why?
15. Explain The factors that affecting ionisation Energy, Electronegativity, Electron Affinity. (Anyone Concept may ask)

Important 5 MARK Qns:

1. Explain the pauling method for the determination for ionic radius. *
2. Explain the periodic trends of ionization enthalpy.
3. Explain the periodic trends of electro negativity in groups and periods. *
4. By using pauling's method to calculate the ionic radii of Na⁺ and F⁻ ions in the NaF crystal.

Centum 2, 3 Mark Task Qns: 4- unit 4-
Important, 2, 3 Mark Hydrogen

Questions:

1. Explain why hydrogen is not placed with halogen in the periodic table.
2. Justify the position of hydrogen in the periodic table. ✕
3. Discuss the three types of covalent hydrides. ✕
4. Give the uses of heavy water. ✕
5. Explain the exchange reactions of deuterium. ✕
6. How do you convert para hydrogen into ortho hydrogen? ✕
7. Mention the uses of deuterium. ✕
8. How is tritium prepared?
9. What are isotopes? Write the names of isotopes of hydrogen. ✕

10. what are hard water and soft water?
11. How is hydrogen bond formed?
12. Differentiate: Hard water and Soft water. ✖
13. Book back Qns no: 27, 28

Important 5 Mark Questions:

1. what are hydrides? Explain the types of hydrides. ✖
2. Explain the methods for removing temporary hardness of water. ✖
3. Explain the removal of permanent hardness of water using Ion-exchange method. ✖
4. Compare the structures of H_2O_2 and H_2O .
5. Difference between Ortho and para hydrogen.
6. Explain the types of hydrogen bonding with example. ✖
7. Write the uses of Hydrogen. ✖

For more search : Delhi High school youtube channel

Centum Mark Task Ans: -

Lesson - 5 Alkali And Alkaline Earth Metals

Important 2, 3 Mark Questions.

1. Give the systematic names of the following:
(i) milk of magnesia (ii) dye (iii) lime with bronze
(iv) Caustic potash (v) washing soda (vi) soda ash
2. Mention the uses of plaster of Paris. *
3. How is plaster of Paris prepared? *
4. Why alkali metals give coloured flame on heating? *
5. Beryllium halides are covalent whereas magnesium halides are ionic. why?
6. Why alkaline earth metals are harder than alkali metals?
7. Why Lithium fluoride has the low solubility among the group I elements?
8. Compare IE_1 and IE_2 values of alkali metals.
9. Compare IE_1 and IE_2 values of alkaline earth metals.

10. Give the reason for anomalous behavior of beryllium.
11. Explain the structure of BeCl_2 .
12. prove that Beryllium hydroxide is an amphoteric nature.
13. Write the uses of Beryllium, strontium and radium. %
14. Write the colours gives in flame test for Alkali and Alkaline earth metals? %
15. Write the uses of a) NaCl b) NaOH c) NaHCO_3
d) Ca(OH)_2 (e) CaO % (f) Na_2CO_3 %

Important 5 mark Ans:

1. Compare the properties of lithium with other elements of the group. %
2. Write the similarities of lithium and magnesium. %
3. Compare the properties of Be with other elements of the group.
4. Give the similarities between Be and Al. %
5. Give the uses of alkali metals.
6. Write the uses of Mg, Ca and Ba. %
7. Write the uses of a) Gypsum %
b) Calcium c) Magnesium.
8. Biological Importance of magnesium and calcium. %
9. Biological Importance of potassium and sodium.

Centum Mark Task Ques: (12)

Lesson - 6 Gaseous state

Important 2,3 Mark Questions.

1. State - Boyle's law. ✖
2. State - Charles law. ✖
3. State - Gay - Lussac's law. ✖
4. State - Avogadro's hypothesis. ✖
5. Define - Kelvin Temperature.
6. Derive - ideal gas equation. ✖
7. State - Graham's law of diffusion / effusion. ✖
8. Distinguish between diffusion and effusion. ✖
9. Book back questions No: 33, (35), 39, 40, (41), (44), 53, 55 ✖
10. Example sums.
11. Define, a) Inversion temperature. b) Inversion Pressure.
12. State Joule - Thomson's effect. ✖

Please prepare Example Problems, Book in
Conceptual Questions also (Toppers only)
Example Why is the interior of a passenger plane
 artificially pressurized? $\times$
Important 5 mark Ans.

1. State - Dalton's law of partial pressure. Derive the partial pressure equation for 'i' the components of the gaseous mixture. $\times$
2. Derive the values of critical constants in terms of Vander Waals constants. $\times$
3. Explain Andrews's isotherm.
4. Write the Vander Waals equation for a real gas. Explain the correction term for pressure and volume.
5. Explain the different methods used for liquefaction of gases. (3 Marks) $\times$
6. a) What is real gas?
 b) Differentiate: Real gas and ideal gas. (3 Marks)
 c) Write the applications of Dalton's law (3M) $\times$

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11th Chemistry public Exam - 2024

Centum Mark Task Ques: 0-7

Lesson - 7 Thermodynamics

Important 2,3 Mark Questions.

1. What are state function and path functions?
Give two examples for each.
2. What are intensive and extensive properties?
Give examples.
3. What is Gibb's free energy? Explain the terms involved. ✗
4. Define - Lattice energy. ✗
5. State third law of Thermodynamics. ✗
6. Define - Hess law of constant heat of summation. ✗
7. What are spontaneous reactions? What are the conditions for the spontaneity of a process?
8. State Zeroth law of thermodynamics. ✗

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9. Derive the relation between C_p and C_v .
10. Define - Internal energy.
11. What are the characteristics of work?
12. Define - Calorie.
13. Define - Specific heat capacity and molar heat capacity?
14. Define - System Surrounding and boundary.
15. Define - Open system closed system and isolated system.
16. How ΔH measured using coffee cup calorimeter?
17. Write the uses of Bomb calorimeter.
18. problems (Example 7.1 - 7.10)

1. What are the characteristics of internal energy?
2. State the various statements first law of thermodynamics.
3. Derive the relation between enthalpy (H) and Internal energy (U).
4. Explain the calculation of Lattice energy of Sodium chloride crystal using born-haber cycle.
5. List the characteristics of free energy.
6. Explain how heat absorbed at constant Volume is measured using bomb calorimeter with a neat diagram.

XI-CHEMISTRY IMPORTANT QUESTIONS - 2022-23
LESSON-1 BASIC CONCEPT OF CHEMICAL CALCULATIONS

2 & 3 MARKS

- ① Define the term mole. (6)
2. Define equivalent mass. (8)
3. Define- Oxidation number. (20)
4. Distinguish between oxidation and reduction. (19, 20)
5. Define - Equivalent mass of an acid and base. (9)
6. Define - Molar mass and molar volume. (8)
7. What are limiting reagent and excess reagent? (17)
8. What is empirical formula and molecular formula? (10)
9. Define - Avogadro number. (70)
10. Oxidation number calculations. (21)
11. Stoichiometric calculations. (15, 16)
12. What is the difference between molecular mass and molar mass. (4)

5 MARKS

- ⑬ Empirical formula and molecular formula calculations. (11, 12)
14. Write note on competitive electron transfer reaction. (26)
15. Explain types of redox reaction. (22)
16. Oxidation number method. (Balancing equation) (25)
17. Ion electron method (balancing equation) (26)

LESSON - 2 QUANTUM MECHANICAL MODEL OF ATOM

2 & 3 MARKS

1. What are the limitations of Bohr's model? (40)
2. Derive De-Broglie equation. (40)
- ⑭ State - Heisenberg's uncertainty principle. (42)
4. Write the electronic configuration of Cu and Cr. (BB)
5. What is (n+1) rule? Give an example. (51)
6. Describe Aufbau principle. (52)
7. State and explain Pauli's exclusion principle. (53)
8. State- Hund's rule. (53)
9. Which has the stable electronic configuration? Ni^{2+} (or) Fe^{3+} ? (57)
10. How many unpaired electrons are present in the ground state of Fe^{3+} ($z = 26$), Mn^{2+} ($z = 25$) and argon ($z = 18$)? (BB)
11. How many orbitals are possible for $n = 4$? (46)

12. Define orbital. What are the n and l value for $3p_x$ and $4dx^2-y^2$ electron? (BB)
13. Give the electronic configuration of Mn^{2+} and Cr^{3+} . (BB)
14. How many radial nodes for $2s$, $4p$, $5d$ and $4f$ orbitals exhibit? How many angular nodes? (48)
15. Define- node. (or) nodal surface. (48)
16. Identify the missing quantum numbers and the sub energy level. (BB)
17. Book back questions No: 37, 47 & 48.
18. Explain briefly the time independent Schrodinger wave equation. (43)

5 MARKS

- ① Write the postulates of Bohr's model of an atom. (39)
- ② What are quantum number? Explain the types of quantum numbers. (44, 45)
3. Explain stability of half filled and completely filled orbitals with examples. (55, 56)
4. Explain shapes of orbitals. (46)
5. List out the important features of quantum mechanical model of atom by schrodinger equation. (44)

LESSON - 3 PERIODIC CLASSIFICATION OF ELEMENTS

2 & 3 MARKS

1. State modern periodic law. (73)
- ② What are iso electronic ions? Give examples. (BB)
3. What is effective nuclear charge? (80)
4. What is screening effect? (80)
5. Define - electro negativity. (87)
6. Define - electron affinity. (86)
7. Define - Ionisation enthalpy. (84)
8. Define - Ionic/atomic radius. (83)
9. Explain diagonal relationship. (90)
10. Give the general electronic configuration of Lanthanoids and actinoids. (78)
11. Explain the calculation of Pauling's scale of electronegativity. (87)
- ⑫ Ionisation energy of 'N' is greater than that of 'O'. Why? (85)
- ⑬ Calculate the effective nuclear charge of $4s$ electron in scandium (Sc) atom. (81)
14. Ionization energy value of beryllium atom is greater than that of Boron. Why? (85)

5 MARKS

1. Explain the Pauling method for the determination for Ionic radius. (83)
2. Explain the periodic trends of ionization enthalpy. (84,85)
3. Explain the periodic trends of electro negativity in groups and periods. (87,88)
4. By using Pauling's method to calculate the ionic radii of Na^+ and F^- ions in the NaF crystal. ($d_{\text{Na}^+ \cdot \text{F}^-} = 231 \text{ pm}$). (84)

LESSON - 4 HYDROGEN

2 & 3 MARKS

1. Explain why hydrogen is not placed with halogen in the periodic table. (101)
2. Justify the position of hydrogen in the periodic table. (101)
3. Discuss the three types of covalent hydrides. (113)
4. Give the uses of heavy water. (111)
5. Explain the exchange reactions of deuterium. (105)
6. How do you convert para hydrogen into ortho hydrogen? (102)
7. Mention the uses of deuterium. (BB)
8. How is tritium prepared? (104)
9. What are isotopes? Write the names of isotopes of hydrogen. (101)
10. What are hard water and soft water? (108)
11. How is hydrogen bond formed? (114)

5 MARKS

1. What are hydrides? Explain the types of hydrides. (113)
2. Explain the methods for removing temporary hardness of water. (109)
3. Explain the removal of permanent hardness of water using Ion-exchange method. (109)
4. Compare the structures of H_2O_2 and H_2O . (101)
5. Difference between ortho and para hydrogen. (101)
6. Explain the types of hydrogen bonding with example. (114)

LESSON - 5 ALKALI AND ALKALINE EARTH METALS

2 & 3 MARKS

1. Give the systematic name of the following: (BB)

(i) milk of magnesia	(ii) Lye	(iii) Lime	(iv) Caustic potash
(v) washing soda	(vi) soda ash	(vii) Trona	
2. Mention the uses of plaster of paris. (148)
3. How is plaster of paris prepared? (147)
4. Why alkali metals give coloured flame on heating? (128)
5. Beryllium halides are covalent whereas magnesium halides are ionic. Why? (143)
6. Why alkaline earth metals are harder than alkali metals? (BB)

7. Why lithium fluoride has the low solubility among the group elements? (132)
8. Compare IE_1 and IE_2 values of alkali metals. (128)
9. Compare IE_1 and IE_2 values of alkaline earth metals. (138)
10. Give the reason for anomalous behavior of beryllium. (139)
11. Explain the structure of $BeCl_2$. (143)
12. Prove that Beryllium hydroxide is an amphoteric nature. (143)
- ✓ 13. Write the uses of Beryllium, strontium and radium. (141, 142)

5 MARKS

- ✓ 1. Compare the properties of Lithium with other elements of the group. (129)
2. Write the similarities of lithium and magnesium. (129)
3. Compare the properties of Be with other elements of the group. (139)
4. Give the similarities between Be and Al. (140)
5. Give the uses of alkali metals. (131)
6. Write the uses of Mg, Ca and Ba. (141, 142)

LESSON- 6 GASEOUS STATE

2 & 3 MARKS

1. State - Boyle's law. (160)
2. State - Charles law. (162)
3. State - Gay-Lussac's law. (164)
4. State - Avogadro's hypothesis. (165)
5. Define - Kelvin Temperature (164)
6. Derive ideal gas equation. (165)
7. State - Graham's law of diffusion/effusion. (168)
8. Distinguish between diffusion and effusion. (168)
9. Book back questions No: 33, 35, 39, 40, 41, 44, 53 & 55
10. Example sums.
11. Define inversion temperature. (175)
- ✓ 12. State Joule - Thomson's effect. (175)

5 MARKS

1. State - Dalton's law of partial pressure. Derive the partial pressure equation for 'i' the components of the gaseous mixture. (166, 167)
- ✓ 2. Derive the values of critical constants in terms of Vander Waals constants. (BB)
3. Explain Andrew's isotherm. (172)
4. Write the Vander Waals equation for a real gas. Explain the correction term for pressure and volume. (BB)
5. Explain the different methods used for liquefaction of gases. (175)

LESSON -7 THERMODYNAMICS

2 & 3 MARKS

1. What are state function and path functions? Give two examples for each.(190, 191)
2. What are intensive and extensive properties? Give examples.(191)
3. What is Gibb's free energy? Explain the terms involved.(214)
4. Define – Lattice energy.(208)
5. State third law of thermodynamics.(218)
6. Define-Hess law of constant heat of summation. (207)
7. What are spontaneous reactions? What are the conditions for the spontaneity of a process? (213 & 215)
8. State zeroth law of thermodynamics. (195)
9. Derive the relation between C_p and C_v .(201)
10. Define – Internal energy.(191)
11. What are the characteristics of work?(192)
12. Define – Calorie. (192)
13. Define – Specific heat capacity and molar heat capacity.(201)
14. Define – System surrounding and boundary.(187,188)
15. Define- Open system, closed system and isolated system.(188)
16. How ΔH measured using coffee cup calorimeter? (145)
17. Write the uses of Bomb calorimeter. (203)
18. Problems (Example 7.1 – 7.10)

5 MARKS

1. What are the characteristics of Internal energy? (191)
2. State the various statements first law of thermodynamics.(195)
3. Derive the relation between enthalpy (H) and Internal energy(U).(197)
4. Explain the calculation of Lattice energy of sodium chloride crystal using boron-Haber cycle.(209)
5. List the characteristics of free energy.(215)
6. Explain how heat absorbed of constant volume is measured using bomb calorimeter with a neat diagram.(202)