Parvatibai Chowgule College of Arts & Science, Margao Goa.

(Higher Secondary Section)

Class: - XII Science | **Max Marks:- 60**

Day: – Monday | **(Subject:-Chemistry)** | **Date:- 5-11-2012**

Time: - 11.15 am. TO 1.45 pm. | **Duration: - 2 $\frac{1}{2}$ Hours**

Total No of Questions: - 6 | **First Terminal Examination-Oct- 2012** | **Total No Of Printed ages: 4**

INSTRUCTIONS:

(1) All questions are compulsory.

(2) Answer each main question on a fresh page.

(3) Figures to the right-indicate full marks.

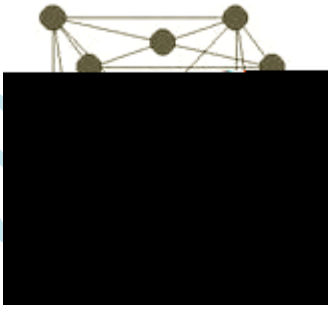
(4) Use of calculators is not permitted, however mathematical tables will be provided on request.

(5)Atomic masses & Constants:- Cr=52, F = 96500 C mol^{-1}, N_A=6.022×10^{23}

Q 1 A Explain the following: 3

(i) Electrophoresis (ii) Coagulation (iii) Dialysis

Q 1 B Identify the type of unit cell shown below and describe it & also deduce the total number of atoms per unit cell. 2



Q 1 C Write an example of each class of compounds given below 2

1) Antipyretic
2) Cationic detergents
3) Antacids
4) Artificial sweeteners

Q 1 D A compound is formed by two elements M and N. The element N forms *ccp* and atoms of M occupy 1/3rd of tetrahedral voids. What is the formula of the compound? 2

Q 1 E Draw a neat labeled diagram showing purification of colloidal solution using Electro-dialysis. 1

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are -1.66 V and -0.44 V respectively .

Q 3 E Write the structure of the chromate ion. 1

Q 4 A Write chemical reactions for the following . 3

1) Preparation of phenol from cumene .
2) Friedel – Crafts acetylation of anisole .
3) Reduction of propanoic acid using $LiAlH_4$ followed by hydrolysis.

Q 4 B Give reasons for the following: 2

1) The para isomer of dichlorobenzene has a higher melting point than the ortho and meta isomers.
2) Scandium (Z = 21) is a transition element but Zinc (Z = 30) is not .Explain .

Q 4 C Explain the following. 2

1) Cleaning action of soaps and micelle formation.
2) What happens when a freshly precipitated ferric hydroxide precipitate is shaken with a little amount of ferric chloride?

Q 4 D Write chemical reactions to show the following conversions: 2

1) Toluene to Benzyl alcohol.
2) Chlorobenzene to p-Nitrophenol.

Q 4 E Write the resonance structures of phenol. 1

Q 5 A Name the following : 3

1) The water soluble component of starch which is a linear polymer of D-(+)- Glucose.
2) The linkage which joins nucleotides in a dinucleotide .
3) A non- reducing disaccharide.

Q 5 B What are essential and non-essential amino acids? Give examples of each type. 2

Q 5 C Answer the following 2

1) Write the chemical equation for the action of bromine water on glucose.
2) How does denaturation affect the structure of proteins.

Q 5 D How much time in minutes will it take to deposit 1.75 g of Chromium when current of 2.25 A flows through a solution of Chromium (III) chloride 2

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Q 5 E Draw the open chain structure of D-(-)- fructose . 1

Q 6 A Answer the following 3

1) Describe the electrolytic refining of Copper.
2) Write the principle involved in zone refining.

Q 6 B Explain the following properties of transition elements 2

1) Formation of complex compounds .
2) Catalytic property.

Q 6 C Answer the following: 2

1) Why do lanthanoids form characteristic coloured compounds
2) Why is actinoid contraction greater from element to element than lanthanoid contraction

Q 6 D An aromatic organic compound with molecular formula C_6H_5Cl is fused with NaOH at 623 K and 320 atmospheric pressure to give Compound 'A'. Compound 'A' on acidification with HCl produces compound 'B' , further reaction of compound 'B' with dilute HNO_3 forms compound 'C'and with concentrated HNO_3 forms compound 'D' .Write the chemical equations for the sequence of the above reactions and identify the products 'A' ,'B' ,'C' &,'D' 2

OR

Q 6 D An unsaturated, unsymmetrical hydrocarbon (A) having molecular formula C_4H_8, when treated with HBr in the presence of organic peroxide gave compound (B). Compound (B) on treatment with aqueous alkali gave compound (C), which on heating with Cu at 573 K gives compound (D). Write chemical equations for the sequence of the above reactions and identify A, B, C and D. 2

Q 6 E Draw the structures of the following : 1

1) β-D-ribose
2) Nucleotide

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