

NORTHWEST ACCREDITATION COMMISSION, USA
HIGH SCHOOL DIPLOMA (Sr. Secondary/12TH) 2014-2015
Subject- CHEMISTRY (Practical), Subject Code – PC402

Question Paper No. :

C	H	6	2
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Date:

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Question Paper Code:

C	P	2	3
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Roll No.:

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TIME: 1.30 Hours.

TOTAL MARKS: 30

IMPORTANT INSTRUCTIONS

1. OPENING AND CHECKING OF THE QUESTION-BOOKLET

Break open the seal of the Question-Booklet only when the announcement is made by the Invigilator. After breaking the seal and before attempting the questions, student should immediately check for:

- a) The number of the printed page in the Question-Booklet is the same as mentioned on the cover page of the Booklet and
- b) Any printing error in the Booklet pages, if any.

Any discrepancy or error should be brought to the notice of the Invigilator who will then replace the Booklet. No additional time will be given for this.

2. No student, without the permission of the Superintendent, or the Invigilator concerned, is to leave his/ her seat or the Examination Room.

3. FILLING UP THE REQUIRED INFORMATION ON QUESTION-BOOKLET AND ANSWER SHEET

After breaking open the seal and checking the Booklet, student should:

- a) Fill up the **Question Paper No.** and **Question Paper Code** (mentioned on the cover of Question- Booklet) in the space provided on the First Answer Sheet.
- b) Fill up his/her Roll Number on the First Answer Sheet and on each Supplementary Answer Sheet, if taken.
- c) Student should mention the total number of **Supplementary Answer Sheet**, if taken, in the space provided on the First Answer Sheet and also fill up the Serial Number mentioned on each **Supplementary Answer Sheet** along with his/her Roll Number in the register maintained by the Invigilator. Student must tie all the Answer Sheets with the thread provided by the Invigilator.

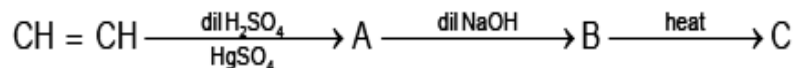
4. INSTRUCTIONS ABOUT QUESTION PAPER

- a) This Question Paper includes five questions. All questions are compulsory.
- b) All questions are carrying Six marks each.

5. Student found in possession of Cellular Phone / Mobile Phone / Pager or any other Communication Device and/or any Book/Note whether using or not, will be liable to be debarred for taking examination(s) either permanently or for specified period or/and dealt with as per law or/and ordinance of the School/SERI according to the nature of offence, or/and he/she may be proceeded against and shall be liable for prosecution under the relevant provision of the Statutory Law.

THE ANSWER SHEET IS TO BE RETURNED ON COMPLETION OF THE TEST

Question 1. (a) Identify A, B and C in the following reaction:



(b) Give reasons

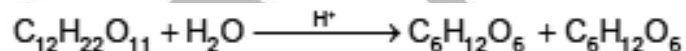
- p*-Nitro benzoic acid has higher K_a value than benzoic acid.
- Acetone is less reactive than acetaldehyde towards nucleophilic attack.

OR

(a) State Raoult's law for a solution containing volatile components. How does Raoult's law become a special case of Henry's law?

(b) 1.00 g of a non-electrolyte solute dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40 K. Find the molar mass of the solute. (K_f for benzene = 5.12 K kg mol⁻¹)

Question 2. (a) For the reaction



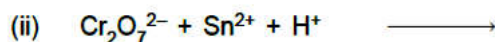
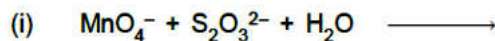
(b) Write:

- rate law equation.
- molecularity.
- order of reaction.

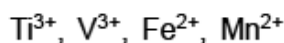
OR

(a) Give two consequences of lanthanoid contraction.

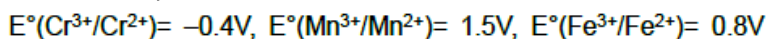
(b) Complete the following reactions:



(c) Which of the following has maximum number of unpaired electrons?



(d) Based on the following data, arrange Fe^{2+} , Mn^{2+} and Cr^{2+} in the increasing order of stability of +2 oxidation state



- Question 3.** (a) Indicate the steps involved in the preparation of $K_2Cr_2O_3$ from chromite ore. Write chemical equations of reactions involved.
- (b) Account for the following:
- Copper is regarded transition metal although it has $3d^{10}$ configuration.
 - Transition metal ions are coloured in water.
 - On moving down Zr to Hf in group 4, it is observed that their atomic and ionic radii are almost the same.

OR

- (a) A reaction is second order in A and first order in B.
- Write the differential rate equation.
 - How is the rate affected on increasing the concentration of A three times?
 - How is the rate affected when the concentrations of both A and B are doubled?
- (b) A first order reaction takes 40 minutes for 30% decomposition. Calculate $t_{1/2}$ for this reaction. (Give $\log 1.428 = 0.1548$)

Question 4. Explain the following:

- Actinoids show large number of oxidation states.
- Transition metals form a large number of complex compounds.
- Chromium is a typical hard metal while mercury is a liquid.
- MnO is basic while Mn_2O_7 is acidic in nature.
- Silver is a transition metal but zinc is not.

OR

Give the pharmacological functions of the following type of drugs:

- (a) Analgesics (b) Tranquilizers (c) Antifertility drugs

- Question 5.** (a) Explain the following:
- Solution of chloroform and acetone is an example of maximum boiling azeotrope.
 - A doctor advised a person suffering from high blood pressure to take less quantity of common salt.
- (b) Differentiate between Keratin and insulin.
- Give one example each for essential and non essential amino acids.
 - Give one reaction of D Glucose which cannot be explained by its open chain structure.

OR

Account for the following:

- (a) Transition elements show highest oxidation state in their oxides than fluorides.
- (b) Cu has positive electrode potential in the first transition series.
- (c) Ionisation enthalpy of lanthanides is higher than actinides.
- (d) Potassium dichromate is a good oxidising agent in acidic medium.
- (e) Actinides show more number of oxidation states than lanthanides.

END OF THE QUESTION PAPER