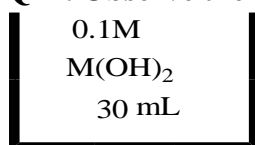**Q -1. Observe the following stem and answer the questions.**

0.1M $M(OH)_2$ 30 mL	0.15M H_2A 10mL
A	B

a. What is p.p.m?   1

b. Why molarity is temperature depended?   2

c. What amount (mL) of 'B' solution should be taken to prepare 100mL centi molar solution of H_2A.   3

d. What will be the new molarity of the mixture if the solution of two containers are mixed together. Analyze mathematically.   4

Q -2. Observe the following stem and answer the questions.

Indicator	pH range to colour change
1. Methyl orange	3.1 - 4.4
2. Phenolphthalein	8.3 - 10

Na_2CO_3 0.1M 30mL	HCl 0.1M 60mL
i.	ii.
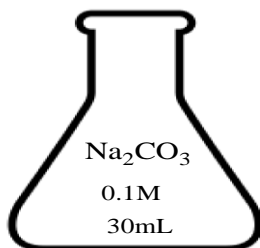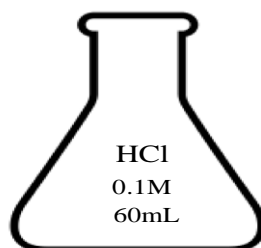
a. What is iodometry?   1
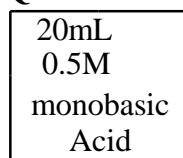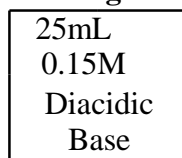
b. Explain W=Zit   2

c. After mixing of two solution in the stem what mL of CO_2 will produced at S.T.P?   3

d. Which will be suitable between two indicator in the stem to titrate soln-ii by soln-i?Analyze with logic.   4

**Q -3. Observe the following stem and answer the questions.**

20mL 0.5M monobasic Acid	25mL 0.15M Diacidic Base
X-solution	Y-solution

a.

b.   2

c. How can you convert the X-solution into a decimolar solution.   3

d. What change will occur in the concentration of acid or base if two solutionin of the stem are mixed together,

## Q -4. Observe the following stem and answer the questions.

$Na_2S_2O_3$
0.1M Sol^n

$CuSO_4 Sol^n$
+
KI Sol^n (excess)

a.

b.
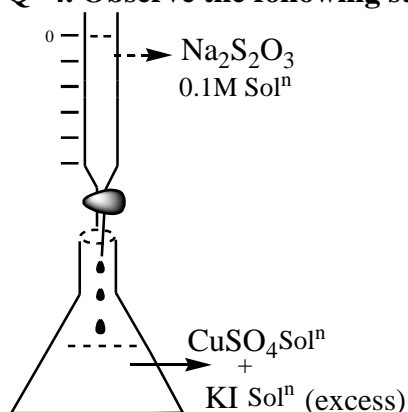
c. Balance the redox reaction which take place first in the conical flask by ion-electron method. 3

d. Can you calculate the amount of Cu, if 30 mL of $Na_2S_2O_3$ solution is nedded to neutralized the produced I_2 in the conical flask?

Q -5. Observe the following stem and answer the questions.

250mL	10mL
Na_2CO_3	H_2SO_4
2.65g	0.15M
A	B

a. What is Indicator? 1

b. Why is there no reaction of Cu with dil H_2SO_4 ? 2

c. Calculate the concentration of A solution in p.p.m unit. 3

d. What will be the nature of the mixture if 10 mL solution of container A is mixed with solution of container B- Analyze mathematically. 4

Q -6. Observe the following stem and answer the questions.

HCl	
$K_2^+Cr_2O_7$	$FeSO_4$
10mL	solution
0.02M	
A	B
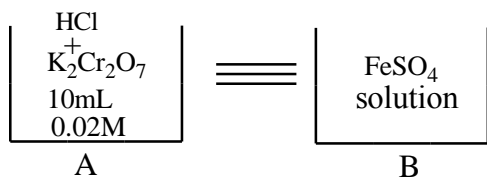
a. What is molarity? 1

b. What is the oxidation number of the central atom in $LiAlH_4$? 2

c. Balance the reaction that occurs when mix the solution of A and B together by ion-exchange method. 3

d. Whether it is possible to determine the amount of 'Fe' if B solution neutralized completely by solution A? Analyze mathematically. 4