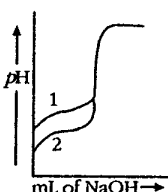


- Q.1** The titration curves labeled 1 and 2 were obtained by titrating equal volumes of two different acid samples with portions of the same sodium hydroxide solution. What conclusions and strengths of acids 1 and 2 from these curves?
- 
- (A) The concentrations are the same but acid 1 is weaker than acid 2.
 (B) The concentrations are the same but acid 1 is stronger than acid 2.
 (C) Acid 1 is the same strength as acid 2, but it is less concentrated.
 (D) Acid 1 is the same strength as acid 2, but it is more concentrated.

- Q.2** Chlorine can be prepared by reacting HCl with MnO_2 . The reaction is represented by this equation
 $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{Cl}_2 + \text{MnCl}_2 + 2\text{H}_2\text{O}$
 Assuming the reaction goes to completion what mass of concentrated HCl solution (36.0% HCl by mass) is needed to produce 2.50 g of Cl_2 ?
- (A) 5.15 g (B) 14.3 g
 (C) 19.4 g (D) 26.4 g
- Q.3** A 1.50 g sample of an ore containing silver was dissolved, and all of the Ag^+ was converted to 0.124 g of Ag_2S . What was the percentage of silver in the ore?
- (A) 6.41% (B) 7.20%
 (C) 8.27% (D) 10.8%

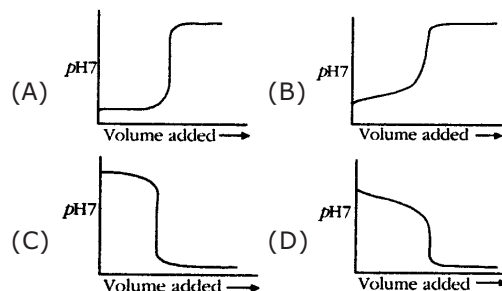
- Q.4** What is the Na^+ ion concentration in the solution formed by mixing 20 mL of 0.10 M Na_2SO_4 solution with 50 mL of 0.30 M Na_3PO_4 solution?
- (A) 0.15 M (B) 0.24 M
 (C) 0.48 M (D) 0.70 M

- Q.5** How many electrons are present in 2.0×10^{-3} moles of $^{18}_8\text{O}^{2-}$?
- (A) 1.2×10^{21} (B) 9.6×10^{21}
 (C) 1.2×10^{22} (D) 1.9×10^{22}

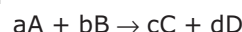
- Q.6** A 0.242 g sample of potassium is heated in oxygen. The result is 0.440 g of a crystalline compound. What is the formula of this compound?
- (A) KO (B) K_2O (C) KO_2 (D) KO_3

- Q.7** Oxalic acid dihydrate, $\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}(\text{s})$ is often used as a primary standard to standardize sodium hydroxide solutions. Which of these facts are reasons to choose this substance as a primary standard?
- I. It is diprotic.
 II. It is a stable compound that can be weighed directly in air.
 III. It is available in a pure form.
- (A) III only (B) I and II only
 (C) II and III only (D) I, II and III

- Q.8** For which titration would the use of phenolphthalein introduce a significant error? $K_{\text{indicator}}$ for phenolphthalein = 1×10^{-9} (i.e. colour change of phenolphthalein takes place at $\text{pH} = 9$)



For a reaction



Three students define different ways of calculating limiting reagents.

Student 1 : Calculate the minimum mols of 'A' needed to completely consume 'B', and if available amount of 'A' exceeds what is needed then 'B' is limiting reagent.

Student 2 : Calculate the mol ratio of each reactant then compare to theoretical mol ratios if theoretical ratio exceeds calculated ratio then reactant in denominator will be limiting reagent.

Student 3 : Calculate the grams of products that can be obtained if each reactant is completely consumed and that reactant is limiting reagent which has produced least mass of products.

- Q.9** Which student(s) has/have defined limiting reagent correctly-
- (A) Student 1 (B) Student 2
 (C) Student 3 (D) None of these

- Q.10** If student 1 finds that when 10g of 'A' reacted with excess of reagent 'B' and 10g of 'B' reacted with excess of reagent 'A' in two different experiments later, experiment produced more mass of product which should be the limiting reagent-
- (A) A (B) B (C) None
 (D) Cannot be predicted

- Q.11** If x mols of A are reacted to y mols of 'B'. Which of the following is correct-

- (A) If $\frac{a}{b} = \frac{x}{y}$ no reactant is left over.
 (B) If $\frac{a}{b} > \frac{x}{y}$ then 'B' reactant is limiting reagent
 (C) If $\frac{a}{b} < \frac{x}{y}$ then 'B' is limiting reagent.
 (D) If $\frac{x}{y} > \frac{a}{b}$ 'A' is limiting reagent.

CHEMISTRY IIT JEE (CLASS TEST - 7) (PHYSICAL) ANSWER KEY

Name : Roll No. :

	A	B	C	D	A	B	C	D	A	B	C	D
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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