

King Saud University

2nd in - term Exam

Medical Laps Diploma

Community service College

1102 anal. Chem.

Time: one hour

Name: ^{new grow} ~~S. M. Al-Sayed~~ S. M. Al-Sayed

No.:

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I- Choose the correct answer:

(5)

1- A buffer solution consists of a mixture of :

- a. A weak acid and a weak base.
- (b) A weak acid and its salt.
- c. A strong acid and a story base.
- d. None of the previous.

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2- The buffer system is the most important one in buffering
blood in the lung is:

- a- $\text{H}_2\text{CO}_3 / \text{CO}_2$
- b- $\text{HCO}_3^- / \text{CO}_2$
- c- $\text{H}_2\text{CO}_3 / \text{CO}_3^{--}$
- (d) $\text{HCO}_3^- / \text{H}_2\text{CO}_3$

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3- The colour of the indicator of methyl orange is:

- ☒ a- Red in the acidic medium.
- b- Yellow in the acidic medium.
- c- Colour less in the basic medium.
- d- None of the previous.

4- When the solution of HCl is titrated by NaOH the contents in the titration flask before the eq. Point is:

- a- H Cl
- b- Na Cl
- ☒ c- H Cl + Na Cl
- d- Na Cl + Na OH

5- Titration curve are very important because:

- 1- The clear by the changes that happen at e.q point.
- 2- It is able to judge the success or failure of the titration.
- 3- Depending on that, the proper evidence is chosen.
- ☒ 4- All of the previous.

II- Mark with (✓) next to correct statements and (×) next to the wrong ones:

1- The principal of Mohar's method depends on the ~~primary~~ ^{secondary} precipitate at the e.q point resulting for the reaction of extra reagent with the indicator (×)

2- In vol hard's method the used indicator is Ferric ion (✓)

3- The effective factor in Mohar's method is the concentration of silver chloride only (×)

4- In vol hard's the titration must be done in basic acid (×)

5- PH of weak acid and it's salt is

$$PH = PK_a + 10g \frac{C_s}{C_a} \quad (✓)$$

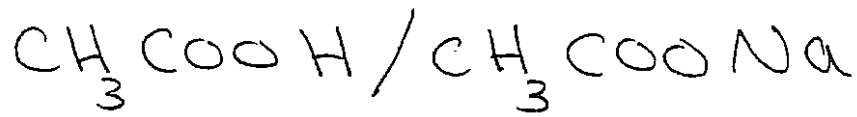
6- When the solution of NaOH (50ml - 0.5M) *Good Luck* is titrated by the solution of HCL (0.5M). The product of PH after adding 50 ml from HCL will be PK_a (✓)

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7- Evidence rang of phenol red is (5.2 - 6.8) (6.8 - 8.4) (×)

* Calculate The pH For The following Solution ?



~~PH~~

$$\text{PH} = \text{PK}_a + \log \frac{C_s}{C_a}$$

$$[\text{CH}_3\text{COOH}] = 0.2 \text{ M}$$

$$[\text{CH}_3\text{COONa}] = 0.4 \text{ M}$$

$$\text{PH} = \text{P}1.8 \times 10^{-5} + \log \frac{0.4}{0.2} \quad K_a = 1.8 \times 10^{-5}$$

$$\text{PH} = -\log 1.8 \times 10^{-5} + \log \frac{0.4}{0.2}$$

~~PH = 4.75 + 0.301~~

$$\text{PH} = 2.75$$

