

# C. U. SHAH UNIVERSITY

## Summer Examination-2019

**Subject Name: Analytical Chemistry - I**

**Subject Code: 4SC03ANC1**

**Branch: B.Sc. (Chemistry,Physics)**

**Semester: 3**

**Date: 18/03/2019**

**Time: 02:30 To 05:30**

**Marks: 70**

**Instructions:**

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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<b>Q-1</b>	<b>Attempt the following questions:</b>	<b>(14)</b>
a)	What is called chromatography?	01
b)	What do you mean by mobile phase?	01
c)	Define pH and give equation for finding the pH value.	01
d)	What do you mean by titration?	01
e)	Define the term EMF.	01
f)	What is called excited singlet and excited triplet state.	01
g)	Define electrode.	01
h)	What do you mean by neutralization titration?	01
i)	Give any two examples of strong acid.	01
j)	What is known as reference electrode?	01
k)	Write any two examples of weak base.	01
l)	Define $R_f$ value in chromatography	01
m)	What is called adsorbent?	01
n)	Define dissociation constant(k)	01

**Attempt any four questions from Q-2 to Q-8**

<b>Q-2</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Give the definition of TLC and write a note on it.	<b>07</b>
b)	Explain the redox titration with example.	<b>07</b>



<b>Q-3</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Discuss the hydrogen and calomel electrode in detail.	<b>07</b>
b)	Explain: (a) Classification of adsorbent used in chromatography and (b) Factors influencing on the fluorescence intensity.	<b>07</b>
<b>Q-4</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Explain the argentometric titration for chloride and bromide with graph.	<b>07</b>
b)	Discuss the Jablonski diagram.	<b>07</b>
<b>Q-5</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Explain the classification of chromatography based on stationary and mobile phase.	<b>07</b>
b)	Discuss the instrumentation of fluorimeter.	<b>07</b>
<b>Q-6</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Explain the principle of adsorption and partition chromatography.	<b>07</b>
b)	Write a note on column chromatography.	<b>07</b>
<b>Q-7</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Write a note on the advantages, limitations and applications of fluorimetry.	<b>07</b>
b)	Discuss the method for determination of dissociation constant of weak acid.	<b>07</b>
<b>Q-8</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Write the applications and discuss the factors affecting $R_f$ value.	<b>07</b>
b)	Explain the titration of weak acid and strong base with curve.	<b>07</b>

