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(FOR THE CANDIDATES ADMITTED  
DURING THE ACADEMIC YEAR 2021 ONLY)

SUB CODE **21UCY6E1**  
REG.NO. :

**N.G.M. COLLEGE (AUTONOMOUS): POLLACHI**

**END-OF-SEMESTER EXAMINATIONS: MAY 2024**

**B.Sc CHEMISTRY**

**MAXIMUM MARKS: 70**

**SEMESTER : VI**

**TIME: 3 HOURS**

**PART – III**

**ANALYTICAL CHEMISTRY -II**

**SECTION - A (10 X 1 = 10 MARKS)**

**ANSWER THE FOLLOWING QUESTIONS.(K1)**

1. In an infrared (IR) spectrum, which of the following functional groups has the highest frequency?  
A. Ketone                      B. Aldehyde                      C. Ester                      D. Alcohol
2. Solvent extraction is more effective when the extraction is repeated with \_\_\_\_\_.  
A. Extra solvent                      B. Large Solvent                      C. Minimum Solvent                      D. No Solvent
3. In the titration of a strong acid and a weak base, which of the following is used as an indicator?  
A. Methyl Orange                      B. Phenolphthalein                      C. Thymol Blue                      D. Fluoresin
4. In alkalimetric titrations, the titrant is \_\_\_\_\_.  
A. Iodine                      B. EDTA                      C. NaOH                      D. Magnesium
5. Which of the following process is adopted for conversion of salt water into fresh water?  
A. Filtration                      B. Coagulation                      C. Desalination                      D. Freezing

**ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES**

**(K2)**

6. Explain the range of the infrared spectrum.
7. Give the representation of distribution coefficient.
8. Define Buffer solution.
9. What is meant by indicators?
10. What is the pH of human Blood?

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**SECTION – B**

**(5 X 4 = 20 MARKS)**

**ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K3)**

11. a) Describe K-band and R-Band  
(OR)  
b) Define the following terms  
(i) Bathochromic shift (ii) Hypsochromic shift (iii) Chromophore  
(iv) Hyperchromic shift
12. a) Discuss the factors affecting solvent extraction.  
(OR)  
b) Explain the extraction of organic species from the aqueous media.
13. a) Compile the Principles and requirement of titrimetric analysis.  
(OR)  
b) Derive Henderson equations
14. a) List the different types of Redox Titrations  
(OR)  
b) How to determination of total hardness of water by complexometric titration with EDTA
15. a) Categorize the water purification methods.  
(OR)  
b) Construct determination of pH.

**SECTION - C**

**(4 X 10 = 40 MARKS)**

**ANSWER ANY FOUR OUT OF SIX QUESTIONS**

**(16<sup>th</sup> QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS  
(FROM Qn. No : 17 to 21) (K4/K5)**

16. Build the Instrumentation of UV-Visible Spectrophotometer.
17. Describe the Instrumentation of IR Spectrophotometer.
18. Discuss the Qualitative and quantitative aspects of solvent extraction.
19. Develop a note on pH of strong and weak acid solutions.
20. Infer the Estimation of chlorides by Volhard's Method.
21. Summarize the Analysis of Nutritional values of food products.

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