Enrollment No. _____

NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Science
Program: M. Sc. in Chemistry (Analytical)
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December - 2022

Course Code: CH212 **Course Name:** SPECTROCHEMICAL ANALYSIS-II AND KINTIC METHODS OF ANALYSIS

Total Marks: 40
Total Pages: 2

Date: 06/12/2022
Time: 2:30 to 4:30 pm

Instructions:

- *Write each answer on a new page.*
- *Use of a calculator is permitted.*
- ** COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping*

Q. No.	Details	Marks	COs*	BTL#
Q.1	Fill in the blanks (Write complete statement in answer sheet) 1. Absorption of incident light by a sample is called as ..... 2. The method in which the time needed to bring about change in concentration of reactant or product is measured is known as ..... 3. Analyzer in X-ray fluorescence is made up of ..... 4. Ethyl alcohol is added to argon in GM counter for ..... 5. In polymers the ..... can be measured using turbidimetry and the degree of crystallinity can be measured using ..... method. 6. Optical element used to obstruct undesired wavelength of light is called as ..... 7. Rotating shutter used in a phosphorimeter is also known as ..... 8. The choice between nephelometric and turbidimetric analysis depends on ..... 9. Lines originating from transition between L and K shells are called as ..... 10. Optical element used to allow desired wavelength of radiation is called as ..... 11. Narrow beam of X-rays are produced with the help of a ..... 12. The purpose of using liquid nitrogen is used in phosphorimetry is ..... 13. Extent of growth of bacteria can be monitored using ..... method. 14. Example of a fluorimetric agent is	15	CO1, CO2	BT1, BT2, BT3
Q.2	Answer the following (a) Explain Laue's method for X-ray diffraction. (b) Explain working of rotating disc phosphoroscope.	6	CO2	BT3, BT4

(c) Draw a neat labelled diagram of a Coolidge tube.

Q.3 Explain **any three** of the following **9**

(a) Instrumentation of fluorimetry.

(b) Types of relaxation methods used to study reaction changes.

(c) Any three applications of X-ray absorption in detail.

(d) Rotating crystal method for X-diffraction studies.

CO3, CO4 BT2, BT3, BT4, BT5

Q.4 Answer **any two** of the following **10**

(a) Explain Jablonski diagram indicating conditions in which a molecule shows fluorescence and phosphorescence.

(b) Explain applications of nephelometry and turbidimetry.

(c) What is scintillation? Explain its significance in detection of X-rays.

CO4 BT1, BT2

**********End of Question Paper**********