

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph. SEMESTER-VII • EXAMINATION – WINTER-2020

Subject Code: BP701TP**Date: 01/01/2021****Subject Name: Instrumental Method of Analysis****Time: 10:30AM To 12:30PM****Total Marks: 54****Instructions:**

1. Attempt any **THREE** questions from Q-1 to Q-6.
2. Q.7 is compulsory to attempt.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) Derive Beer's Law. Give reasons for deviations from Beer's law? **06**
(b) Define Chromophores, auxochromes and Bathochromic shift with example. **05**
(c) What is chemical quenching? Give its example. **05**
- Q.2** (a) Explain sample handling in IR spectroscopy. **06**
(b) Describe Principle and instrumentation of Flame photometry. **05**
(c) Describe thermal detectors used in IR spectrophotometry. **05**
- Q.3** (a) Describe principle involved in separation in TLC along with stationary Phases used in TLC. **06**
(b) Give advantages and disadvantages of Adsorption chromatography **05**
(c) What are the modes of development in paper chromatography? **05**
- Q.4** (a) Write a note on Gel electrophoresis along with its applications. **06**
(b) Give applications of Thin Layer Chromatography. **05**
(c) Describe principle and applications of Atomic absorption spectroscopy **05**
- Q.5** (a) What is the principle and which carrier gas is suitable for use in
a. Katharometer b. Flame ionization detector c. Electron capture detector **06**
(b) Differentiate between isocratic and gradient elution technique. **05**
(c) Define Retention time, Retention Volume, Resolution and HETP. **05**
- Q. 6** (a) What is an Ion exchange resin? **06**
(b) Write factors affecting ion exchange chromatography **05**
(c) Give application of Gel and affinity chromatography. **05**
- Q.7** (a) Which principle is involved in Normal Phase and Reverse Phase chromatography **06**
OR
(a) What are the different types of vibrations? Explain in detail **06**
OR
(a) Explain Instrumentation of UV-Visible spectrophotometer **06**
