

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Pharm. - SEMESTER– VII• EXAMINATION – SUMMER -2021**

**Subject Code: Instrumental Methods of Analysis****Date: 03/08/2021****Subject Name: BP701TP****Time: 10:30AM TO 01:30PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

<b>Q.1</b>	(a) Give brief account on (i) Photomultiplier tube (ii) Auxochromes	<b>06</b>
	(b) State and derive Beer-Lambert's Law	<b>05</b>
	(c) Write a detail note on UV-Spectrophotometry	<b>05</b>
<b>Q.2</b>	(a) Describe the factors affecting fluorescence	<b>06</b>
	(b) Explain the terms (i) Quenching (ii) Singlet, doublet and triplet electronic states	<b>05</b>
	(c) Write a detail note on sample handling in IR spectroscopy	<b>05</b>
<b>Q.3</b>	(a) Explain the working principle of FTIR spectroscopy. Explain the difference between dispersive IR and FTIR.	<b>06</b>
	(b) Explain with example- Fundamental modes of vibrations in poly atomic molecules	<b>05</b>
	(c) Give a brief account on (i) Golay cell (ii) Bolometer	<b>05</b>
<b>Q.4</b>	(a) Write a brief note (i) Applications of atomic absorption spectroscopy in Pharmaceutical science (ii) Nephelometry	<b>06</b>
	(b) Explain the working principle of flame photometer with neat diagram	<b>05</b>
	(c) What are the types of paper chromatography? Give the applications of paper chromatography in pharmaceutical science	<b>05</b>
<b>Q.5</b>	(a) Explain the terms (i) HETP (ii) Tailing (iii) Resolution	<b>06</b>
	(b) Explain the basic principle and applications of zone electrophoresis	<b>05</b>
	(c) Discuss about derivatization in gas chromatography	<b>05</b>
<b>Q.6</b>	(a) Explain the principle of HPLC. Explain its applications in pharmaceutical science	<b>06</b>
	(b) Differentiate between HPLC and GC	<b>05</b>
	(c) Give brief account on resins used in ion exchange chromatography.	<b>05</b>
<b>Q.7</b>	(a) Write short note (i) Flame ionization detector (ii) Gel chromatography	<b>06</b>
	(b) Write a short note on stationary phase and mobile phase used in HPLC	<b>05</b>
	(c) Explain the basic principle of affinity chromatography. Enumerate applications of affinity chromatography.	<b>05</b>

