



DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2022

<https://pharmacyindia.co.in/>

Course	: B. Pharmacy	Date:	03/01/2023
Subject Name	: Instrumental Methods of Analysis	Sem:	VII
Max Marks	: 75	Subject Code:	BP701T
		Duration	: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary <https://pharmacyindia.co.in/>
3. Figures to right indicate full marks

Q. 1. Answer following questions. (10 x 2) = 20

- i) Write the electronic transitions for the following molecules.
a) 1-3 butadiene b) acetaldehyde
- ii) Differentiate between singlet and triplet state.
- iii) Differentiate between single component and multicomponent analysis.
- iv) The compound A had travelled distance 5 cm, compound B distance travelled 7 cm on TLC plate. The solvent front distance was 10 cm. Calculate the R_f value for compound A and B?
- v) What is quenching. Enlist its types. <https://pharmacyindia.co.in/>
- vi) Draw a diagram of single beam and double beam UV-Visible spectrophotometer.
- vii) Differentiate between normal phase and reversed phase chromatography.
- viii) Define with example: auxochrome, chromophore.
- ix) Why derivatization techniques required in gas chromatography? Enlist derivatization methods used in GC.
- x) Calculate the concentration of compound in an ethanolic solution of which the absorbance in a 1cm cell at its λ_{max} 241 nm, was found to be 0.890. The A (1%, 1cm) of compound D is 540 at 241nm. <https://pharmacyindia.co.in/>

Q. 2. Answer the following questions (any two) (2 x 10) = 20

- i) Explain principle, instrumentation and applications of High performance Liquid Chromatography (HPLC).
- ii) Explain principle, instrumentation and applications of Gas Chromatography.
- iii) Explain the principle, instrumentation and applications of IR spectroscopy.

Q. 3. Answer the following questions (any seven) <https://pharmacyindia.co.in/> (7 x 5) = 35

- i) Distinguish between fluorescence and phosphorescence. Explain factors affecting fluorescence.
- ii) Discuss principle, instrumentation and applications of Gel chromatography.
- iii) Define Chromatography. Classify chromatographic methods with examples.
- iv) Explain the principle of Affinity Chromatography.
- v) Differentiate paper chromatography against TLC with respect to principle and applications.
- vi) Differentiate principle and applications of gel electrophoresis against capillary electrophoresis. <https://pharmacyindia.co.in/>
- vii) Differentiate principle and application of nephelometry against turbidimetry.
- viii) Write principle, types and applications of Ion Exchange Chromatography.
- ix) Explain principle, instrumentation and applications of Atomic Absorption spectroscopy.

-----END OF THE PAPER----- <https://pharmacyindia.co.in/>