

# Question Paper

Exam Date & Time: 13-May-2023 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

IV Year Pharm D/ I Pharm D Post Baccalaureate  
University Examination April 2023

### Pharmaceutical Analysis [PQA 3.2T-S3]

Marks: 70

Duration: 180 mins.

#### A: Long Answer Questions

Answer all the questions.

Draw diagrams wherever necessary

- 1) Explain the stages of equipment qualification. (10)
- 2) Explain the working of a GC equipment with a schematic diagram. (5)
  - a)
  - b) What are the types of operations in GC? Discuss the advantages of PTGC with suitable example. (5)
- 3) Explain the qualitative and quantitative applications of UV- Visible spectroscopy. (10)

#### B: Short Answer Questions

Answer all the questions.

- 4) Explain the types of currents in polarography. Write Ilkovic equation. (5)
- 5) Explain the factors affecting fluorescence intensity. (5)
- 6) Explain the relationship between frequency of applied radiation and strength of magnetic field in NMR spectroscopy. (5)
- 7) Explain the working of electrodeless discharge lamp using neat schematic diagram. (5)
- 8) Explain optical rotatory dispersion (ORD) and plot a ORD curve. (5)
- 9) Classify ionization sources used in mass spectrometry. (2)
  - a)
  - b) Explain the working of electron impact (EI) source. (3)

#### C. Give Reasons for the Following

Answer all the questions.

- 10) Why the concentration of titrating reagent is always 100 times higher than that of analyte solution in conductometric titrations? (2)
- 11) Why high pressure pumps are needed in HPLC? (2)
- 12) Explain the relevance of Hookes' law in IR spectroscopy. (2)
- 13) Why tetramethylsilane (TMS) is used as internal reference compound for  $^1\text{H}$  NMR spectroscopy? (2)
- 14) Why amorphous compound show halo pattern in XRD diffraction spectra? (2)

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