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**School of Biomedical Science**

Master of Science in Forensic Science

Mid Term Examination - Nov 2023

Duration : 90 Minutes

Max Marks : 50

**Sem I - Q1PQ102T - Advanced Physical Instrumentation**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Outline the arrangement of radiation in an EM spectrum K2 (2)
  - 2) Define the resolution of an instrument, and how does it impact the precision of measurements? K1 (3)
  - 3) Explain how can the source of noise in measurement instruments be identified and reduced? K2 (4)
  - 4) Summarize the working of UV-Vis spectrophotometer K2 (6)
  - 5) Identify common sources of noise in measurement systems and discuss ways to mitigate them. K3 (6)
  - 6) Construct an analytical experiment for determination of concentration of benzodiazepines in the suspected sample using UV-vis spectrometer by employing standardization method (for determination of concentration) K3 (9)
  - 7) Classify the different sources of radiation employed for IR radiation K4 (8)
  - 8) Distinguish between different types of quantum numbers K4 (12)
- OR**
- Distinguish between different types of detectors used in spectrometers K4 (12)