

科目：分析化學

適用：應化系

考生注意：

1. 依次序作答，只要標明題號，不必抄題。
2. 答案必須寫在答案卷上，否則不予計分。
3. 限用藍、黑色筆作答；試題須隨卷繳回。

本 試 題

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## Analytical Chemistry

1. Define the following terms in analytical chemistry: (50 points, 5 points each)
  - (1) Accuracy
  - (2) Precision
  - (3) Buffer solution
  - (4) Electrochemistry
  - (5) Separation science
  - (6) Mass spectroscopy
  - (7) Hyphenated method
  - (8) Limit of detection
  - (9) Charge coupled device
  - (10) Atomic force microscopy
2. What are the principles of photomultiplier tubes. (You can draw a figure to explain it if needed.) (10 points)
3. What are the main advantages of Fourier transform in analytical chemistry. (15 points)
4. What are the main advantages of Raman spectroscopy versus Infrared spectroscopy for applications in analytical chemistry? (10 points)
5. Optical spectroscopic methods are based on 6 basic phenomena. Please name 3 phenomena of them. (15 points)