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Courses » Inductive Couple Plasma Atomic Emission Spectrometry ( ICP-AES) for Pollution Monitoring

Announcements Course Ask a Question Progress Mentor

# Unit 5 - Practice and applications of ICP - AES for chemical analysis

## Course outline

How to access the portal

Introduction, Atomic and molecular structure

Interaction of Electromagnetic radiation with matter

Instrumentation of Atomic Emission Spectroscopy

Practice and applications of ICP - AES for chemical analysis

● Practice and applications of ICP AES I - Nebulizers

● Practice and applications of ICP AES - II - Sample handling

● Practice and applications of ICP AES - III - Chemical analysis

● Practice and applications of ICP AES - IV - Chemical analysis

● Practice and applications of ICP AES - V -

## Week-4 Assignment

The due date for submitting this assignment has passed. **Due on 2018-03-07, 23:59 IST.**

### Submitted assignment

1) Nukiyaman and Tansawa equation shows that the mean droplet diameter of the aerosol particle is: **1 point**

- Directly proportional to the liquid viscosity and inversely proportional to the surface tension of the solvent
- Inversely proportional to the liquid viscosity and directly proportional to the surface tension of the solvent
- Directly proportional to the liquid viscosity and surface tension of the solvent
- Inversely proportional to the liquid viscosity and surface tension of the solvent

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Inversely proportional to the liquid viscosity and surface tension of the solvent*

2) Concentric and cross flow nebulizers are: **1 point**

- Self feeding without ventury effect
- Not self feeding but with ventury effect
- Self feeding with ventury effect
- Not self feeding but without ventury effect

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Self feeding with ventury effect*

3) Babington nebulizers are useful whenever the sample contains, **1 point**

- Low concentration of the analyte
- High concentration of the analyte
- Low concentration of the dissolved salts
- High concentration of the dissolved salts

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*High concentration of the dissolved salts*

4) In ICP a mineral sample containing silica and fluoride is to be ashed and analysed. The best method of ashing would be: **1 point**

Chemical  
analysisQuiz : Week-4  
AssignmentDOWNLOAD  
VIDEOS

- With aqua regia
- With HF and HCl
- Hot acid digestion in PTFE beakers
- Acid digestion in a PAR bomb

**No, the answer is incorrect.****Score: 0****Accepted Answers:***With HF and HCl*5) Multivariate method of calibration of elements is preferred in ICP - AES because, **1 point**

- Matrix effects are also taken into account
- Interference effects are also taken into account
- Both matrix and interference effects are taken into account
- None of these

**No, the answer is incorrect.****Score: 0****Accepted Answers:***Both matrix and interference effects are taken into account*6) ICP - AES is advantageous for chemical analysis of elements because, **1 point**

- The calibration is linear over several orders of concentration
- The calibration is quadratic or polynomial
- The calibration is better because an internal standard I used
- The calibration is linear over same order of concentration

**No, the answer is incorrect.****Score: 0****Accepted Answers:***The calibration is linear over several orders of concentration*7) In ICP - AES, dissociation process frequently takes place between the flame gasses. These ions cause: **1 point**

- Enhancement of the analytical signal
- Decrease in the analytical signal by suppressing the ionization of the analyte
- No change in the signal if the dissociation produces neutral gases
- None of these

**No, the answer is incorrect.****Score: 0****Accepted Answers:***Decrease in the analytical signal by suppressing the ionization of the analyte*8) Back ground correction for interference is possible in ICP - AES because: **1 point**

- We can do the calibration using greater resolution to reduce the interference
- The software for ICP - AEs has powerful routines for deconvolution of overlapping lines
- Back ground is easily corrected by drawing an appropriated base line
- Back ground data is already corrected in the computer

**No, the answer is incorrect.****Score: 0****Accepted Answers:***Back ground is easily corrected by drawing an appropriated base line*9) Precision of measurement refers to the closeness of the **1 point**

- Accurate values
- Most probable values
- True value with / without error

All of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Accurate values*

10) Detection limit of an element in ICP - AES is given by:

**1 point**

$\frac{I_C}{I_A} \cdot k \cdot s$

$\frac{I_m}{I_A} \cdot k \cdot s$  **Invalid HTML tag: tag name o:p is not allowed**

Any of the above

Both (a) and (b)

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

$\frac{I_m}{I_A} \cdot k \cdot s$  **Invalid HTML tag: tag name o:p is not allowed**

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