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NPTEL

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

Announcements Course Ask a Question Progress Mentor

Unit 3 - Interaction of Electromagnetic radiation with matter

Course outline

How to access the portal

Introduction, Atomic and molecular structure

Interaction of Electromagnetic radiation with matter

● Nature of Electromagnetic radiation

● Interaction of Electromagnetic radiation with matter - I

● Interaction of Electromagnetic radiation with matter - II

○ Quiz : Week - 2 assignment

Instrumentation of Atomic Emission Spectroscopy

Practice and applications of ICP - AES for chemical analysis

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Week - 2 assignment

The due date for submitting this assignment has passed. **Due on 2018-02-18, 23:59 IST.**

Submitted assignment

1) Isotopes of nuclei with even number of neutrons are: 1 point

- More compared to nuclei containing odd number of neutrons
 Less compared to nuclei containing odd number of neutrons
 Equal compared to nuclei containing odd number of neutrons
 All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

More compared to nuclei containing odd number of neutrons

2) EM radiation ranges from: 1 point

- Less than 1A to 1km
 1A - 25 cm
 400 nm - 800 nm
 10 A - 400 μm

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No, the answer is incorrect.

Score: 0

Accepted Answers:

1A - 25 cm

3) Frequency is expressed as number of cycles per second or as wave number. Wave number which signifies 1 point

- Amplitude
 Wave height
 Number of waves per second
 Speed of light

No, the answer is incorrect.

Score: 0

Accepted Answers:

Number of waves per second

4) The magnetic quantum number "m" magnifies only in 1 point

- Electric field
 Magnetic field

- Both electric and magnetic fields
- Any of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Magnetic field

5) Half width of a spectral line is defined as:

1 point

- 1/2 of its wavelength
- 50% the intensity of the incident radiation
- Width where the intensity of emitted radiation is 50%
- 50% the total area of the peak

No, the answer is incorrect.

Score: 0

Accepted Answers:

Width where the intensity of emitted radiation is 50%

6) Scattering of radiation results in constructive and desructive interference by,

1 point

- Particulates having smaller size than the radiation wavelength
- Particles having similar size as the radiation wavelength
- Particulates having larger molecular size tahn radiation wavelength
- All size of particles produces tha above effects

No, the answer is incorrect.

Score: 0

Accepted Answers:

Particles having similar size as the radiation wavelength

7) The emission life time of an electronic transition is:

1 point

- 10^{10} sec
- 10^{-8} sec
-
- 10^{-6} sec
-
- 10^{-12} sec

No, the answer is incorrect.

Score: 0

Accepted Answers:

10^{-12} sec

8) wave number (ν)...

1 point

- Increases with energy of photons
- Decreases with energy of photons
- Independent of energy of photons
- Not related to energy of photons

No, the answer is incorrect.

Score: 0

Accepted Answers:

Independent of energy of photons

9) A plane polarized electromagnetic wave,

1 point

- Has vibration in one plane
- Vibration in all directions
- Vibration between two poles

No vibrations

No, the answer is incorrect.

Score: 0

Accepted Answers:

Has vibration in one plane

10) Littrow mounting,

1 point

- Dispersed radiation is collected on the other side
- Dispersed radiation is not scattered
- Dispersed radiation is scattered
- Dispersed radiation is collected on the same side

No, the answer is incorrect.

Score: 0

Accepted Answers:

Dispersed radiation is collected on the same side

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