

**Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University) Coimbatore-641043.**

**Master's Degree Examinations – November 2018
Semester III**

**Class : II PG
Major : Chemistry**

**Time: 3 hours
Max. Marks: 60**

17MCHC13 – SPECTROSCOPY - II

Part A

10 x 1/2 = 5

Choose the correct answer

- For which of the following molecules could a pure rotational spectrum not be observed in the gas phase ?
a. CO b. NO c. N₂ d. HCL
- Match the Molecular formula to the number of degrees of vibrational freedom. Which pair is correct ?
a. SO₂ - 3 b. CS₂ - 3 c. CO₂ - 3 d. H₂S - 4
- The light source used in modern Raman Spectroscopy is
a. Mercury b. Sodium c. Laser d. Lithium
- Raman effect is
a. absorption of light b. emission of light c. inelastic scattering of light d. None
- What is the x-axis of a mass spectrum ?
a. mass b. mass/charge c. mass/energy d. charge
- The base peak in a mass spectrum is
a. The highest mass peak b. The lowest mass peak
c. The peak at 100% relative intensity d. The peak corresponding to the parent ion
- For Iron containing samples ----- is used as source.
a. ⁵⁷Fe b. ⁵⁷Co c. ⁵⁸Fe d. ⁵⁸Co
- If Mossbauer spectrum of Fe(co)₅ is recorded in presence of a magnetic field the original spectrum with 2 lines will undergo
a. Hyperfine splitting b. No change c. 1 line d. None
- Which of the following is not a component of emission system in Flame Photometer ?
a. Burner b. Atomiser c. Fuel gases d. Chopper
- In Atomic Absorption Spectroscopy which of the following is the generally used as radiation source ?
a. W lamp b. Xe – Hg arc lamp c. Hollow cathode lamp d. None

