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Comparison b/w IR & Raman Spectra:-

Infra red spectra	Raman spectra
• It is due to absorption of radiation by the vibrating molecules.	• It is due to scattering of Virradiation by the vibrating molecules.
• According to Selection Rule: Dipole moment of the molecules changes.	• Polarizability of the molecules changes.
• For IR, water cannot be used as a solvent.	• For Raman, water can be used as a solvent.
• In IR, Dilute solution are used.	• But in Raman, concentrated solution are used.
• condition i.e: purity and impurity of the substance is not rigid.	• In Raman, substance must be pure and colourless.

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• In IR spectroscopy, homonuclear diatomic molecules are in non active modes bcz there is no dipole moment.	• In Raman spectroscopy homonuclear diatomic molecules are in active modes due to the polarizability.
• In IR spectroscopy, Method is accurate and sensitive.	• In Raman spectroscopy, Method is less accurate and less sensitive.
• In IR, optical system is made up of special crystal like NaBr, CaF_2 etc.	• In Raman, optical system is made up of Glass or quartz.
• No need for specific sample Preparation.	• Need for specific sample preparation.
• Provide information of the covalent characteristics of the molecules.	• Provide information of the ionic characteristics of molecules.