What are: plasmons, polarons, bipolarons, excitons, magnons?

Quasiparticles!

plasmons: coupled electromagnetic charge wave
surface plasmons: plasmons at interfaces; lower energy than bulk plasmons

polarons: electron plus ionic polarization field; in materials with low electron density; there are large (Fröhlich) and small polarons (Holstein): large polarons have a very high effective mass and can be found in ionic insulators; small polarons have a small size $\sim$ lattice constant and occur in organic semiconductors or insulators.

bipolarons: are a bound pair of polarons which has an integer spin and becomes a boson

excitons: bound pair of an electron and a hole found in insulators and semiconductors
Frenkel excitons: high binding energy, strongly localized
Mott Wanier excitons: lower binding energy, rather big distance between e^- and h^+

magnons: excitations of ordered magnetic states; bosons

Are they collective modes? Explain your reasoning.

plasmons: collective mode $\leftarrow$ coupled charge wave

polarons and bipolarons: particle- like quasiparticle $\leftarrow$ electron + field

excitons:
Mott Wannier: particle like
Frenkel: collective mode ← particles can form bands

magnons: collective mode ← excitation of amgnetic spin wave

see also http://lamp.tu-graz.ac.at/ hadley/ss2/quasiparticles/quasiparticles.php

How could you observe these quasiparticles experimentally?

An experimental technique to meassure quasiparticles is Raman Spectroscopy: The specimen is exposed to laserlight from which a small part scatters inelastically. The laserlight photons can give off energy to produce a quasiparticle or take the energy from an already existing. In the Raman spectra these processes can be realted to the Stokes (creation of quasiparticle) and the Anti-Stoke peaks.

aditionally:

plasmons: Electron Energy Loss Spectroscopy (EELS/ HREELS) (equidistant peaks in spectrum → peak distance= plasmonenergy)

magnons: Neutron scattering- inelastic scattered neutrons create or annihilate magnons