

The Interstellar Medium.

1. A hot glowing opaque solid body surrounded by a cool gas will show:
 - a) Continuous emission
 - b) Emission lines
 - c) Absorption lines
 - d) Both emission and absorption

2. Which of the following statements about dust is false:
 - a) Scattering by dust particles causes reflection nebulae to look blue
 - b) 21 cm radiation is a good tracer of dust
 - c) Dust can make objects look redder because grains preferentially absorb blue light
 - d) Dust is cold and emits light in the infra-red.

3. The uniqueness of the spectral line pattern of an element is caused by:
 - a) The density of gas
 - b) The energy level structure of the atom
 - c) The temperature of the gas
 - d) The Doppler shift

4. We see a spectral line in a gas cloud that is normally observed at 500 nm actually at 499 nm. What velocity is the cloud travelling relative to us? Is it approaching or receding?

5. A dusty nebula emits radiation at 10^4 nm (10000 nm). What is its temperature (assume blackbody radiation)?