To make up this group activity which was done in class on Wednesday Sep 12th, complete it on your own and turn it in to Dr H in class on Friday Sep 14th.

MAKE-UP for GROUP ASSIGNMENT G-1: UNDERSTANDING ABSORPTION CURVES

(worth 5 pts)

CLASS: Sec 001+002 12:00- 12:50 pm Sec 003+004 1:00 - 1:50 pm [CIRCLE ONE]

Sign below with your SIGNATURE: _____

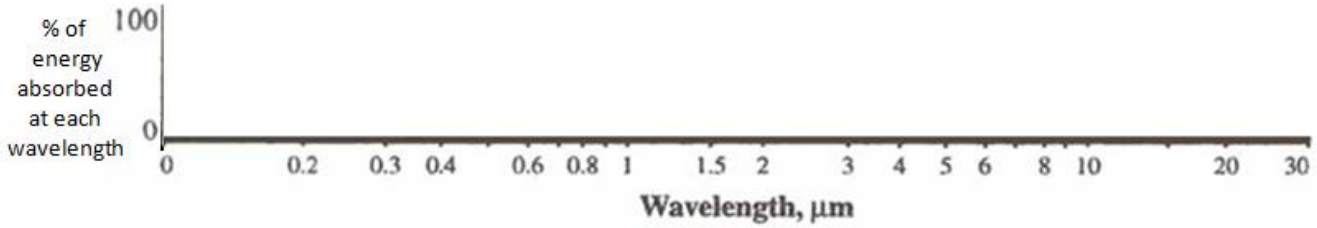
Now PRINT YOUR NAME legibly next to the signature: _____

BACKGROUND:

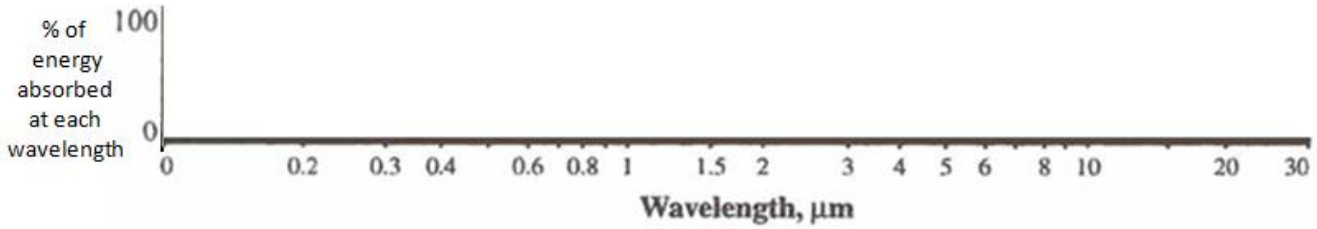
ABSORPTION CURVES (diagrams that show *which* wavelengths of energy different gases selectively absorb)

> We use an **absorption curve** (graph) to show the relationship between **wavelengths** of the electromagnetic spectrum (along the horizontal axis) and the **% of energy at each wavelength** that is absorbed by a particular gas (vertical axis)

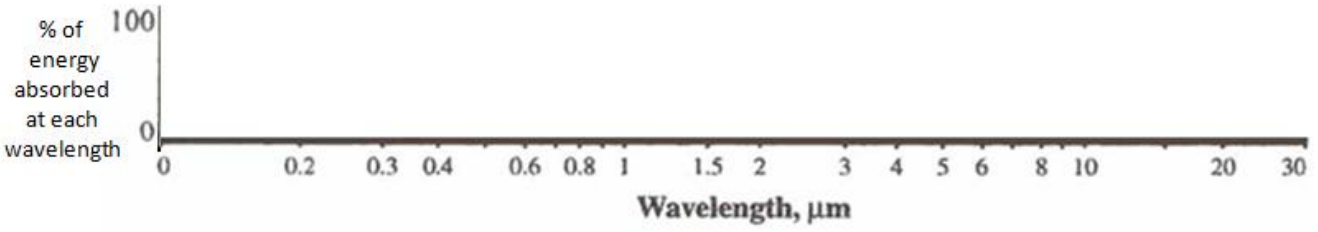
Q1. *Draw an absorption curve for a hypothetical gas that can absorb ALL UV radiation but zero visible light and IR radiation. Then **shade in the area under your curve** in this and subsequent questions.*



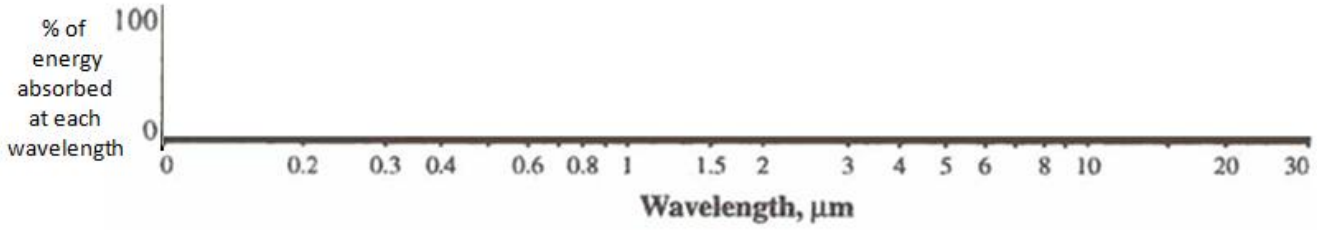
Q2. *Draw an absorption curve for a "perfect" greenhouse gas that absorbs ALL IR radiation, but no visible or UV:*



Q3. *Draw an absorption curve for a hypothetical gas that absorbs ALL UV radiation and ALL IR radiation, but leaves a "WINDOW" open for visible light, allowing the visible light wavelengths to pass through the gas unimpeded <u>without</u> being absorbed:*



Q4. *Draw an absorption curve for a hypothetical gas that can absorb 100% of the IR radiation in these three wavelength bands*: **band from 2 to 2.5 μm** **band from 3 to 4 μm** **band from 13 to 20 μm**



Q5. Is the hypothetical gas in Q4 likely to be a GREENHOUSE GAS? YES No *(circle one)*

Briefly explain WHY you answered YES or NO: