**The Factors Involved In Global Climate Change**

*Midterm exam preparation*

**Directions:** Take your findings from class and organize responses to the following prompts. It may be necessary at times to conduct some additional research using available resources. Your responses may be used to help you on the final exam – be sure to include key facts/data that can be used to help support your answers on the midterm. Please be sure to have this work with you the day of the final.

1. What are the **natural causes** of climate change we have studied in class? How can each affect climate?
2. On what **timescale** do these changes occur (how long do they take)?
3. What are the **human causes** of climate change we have studied in class? How can each affect climate?
4. How can **buildings and urban areas** impact temperature and climate? Provide specific causes and examples of how this occurs.
5. What **components (particles, gases) in the atmosphere** can influence its ability to retain heat and/or block sunlight?
6. What are some significant **sources of each component** from Question 5? Include both natural sources and man-made sources wherever possible. Explain if these are naturally occurring, human caused, or a combination of both.
7. Why are some of these components called **greenhouse gases**? What impact do these components have on the atmosphere’s ability to retain heat? (Provide data to support this response.)
8. On what sort of time scale do these components fluctuate (change) in the atmosphere? Are they short-lived, or do changes only take place over long time periods?
9. Rank all of the components you have discussed in the all the previous questions based on how significant each is in impacting the Earth’s global climate. Justify your ranking.
10. In what ways is the “dog in the car” a good model of climate change on earth? In what ways is it a poor model? (Similarities and differences of that model and what is really happening)
11. Model how the components can together cause natural cycles in the Earth’s global climate, including how human activity may influence the natural cycle.