

***Homework No. 2; additional questions to help you in studying for Quiz. I am not expecting you to hand in answers to these questions.***

16. What are the chemical effects of methane ( $\text{CH}_4$ ) on the stratosphere?
17. What reaction usually initiates the oxidation of methane?
18. What molecule is the source of nitrogen oxides for the stratosphere? How does that molecule fit into the global nitrogen cycle?
19. What is the role of the  $\text{N}_2$  molecule in the stratosphere?
20. What are some of the key differences between the stratosphere and the troposphere?
21. What molecule is the most important in determining the oxidizing capacity of the troposphere? Why is oxidizing capacity important?
22. What is the role of nitrogen oxides in determining the ozone concentration in the troposphere?
23. What are the ultimate products of the oxidation of methane? What about higher hydrocarbons?
24. What molecules can be formed from hydrocarbon oxidation that have sufficiently long lifetimes to accumulate measureable concentrations in the troposphere?
25. What is meant by the  $\text{NO}_x$ -controlled regime and the VOC-controlled regime in tropospheric ozone chemistry?