

## Lab: Global Warming & the IPCC

**Background:** The Intergovernmental Panel on Climate Change is the world's leading authority on climate change. The IPCC was created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options. Answer the following questions using their [most recent report](#). (3 pts each / #30 = 13 pts)

### **PART A: Current Status and Trends** (pg4)

1. What is the current estimated rate of anthropogenic warming? (A.1) (pg4)
2. Identify **three** substantial impacts of climate change that have high or very high confidence. (SPM.1) (pg7)
3. What is the current progress in our adaptation to climate change? What communities are most at risk? (A.3) (pg8)

### **PART B: Future Climate Change, Risks, and Long-Term Responses** (pg12)

4. There is high confidence that warming will be 1.5 °C in the near term. What is considered near term? (B.1) (pg12)
5. Where is the Annual Hottest-Day Temperature Change projected to increase the most? (SPM.2) (pg14)
6. Projections of Annual Mean Soil Moisture Change largely follow what **two** processes? (SPM.2) (pg14)
7. Where is the Wettest-Day Precipitation Change projected to increase the most? (SPM.2) (pg14)
8. Identify **three** impacts of climate change in SPM.3. (SPM.3) (pg16)
9. What is the likelihood of limiting warming to 1.5 °C? What is the likelihood of limiting warming to 2.0 °C? (B.5.2) (pg19)
10. Describe what is needed to limit warming. When could global net zero CO<sub>2</sub> emissions be reached? (B.6) (pg20)
11. Compare the reduction in greenhouse gases needed for 1.5 °C and 2 °C to the reduction in greenhouse gases projected through policies currently implemented. (SPM.5) (pg22)
12. Identify the **two** major greenhouse gases analyzed in SPM.5. (SPM.5) (pg22)
13. If warming exceeds 1.5 °C, what feedback mechanisms make reductions more difficult? (B.7) (pg23)

### **PART C: Responses in the Near Term** (pg24)

14. What will enable climate resilient development for all people? (C.1) (pg24)
15. Of the seven conditions that enable individual and collective actions, choose the **four** that you feel are most important and rank them 1-4. (SPM.6) (pg25)
16. Of the five conditions that constrain individual and collective action, choose the **three** that you feel are most important and rank them 1-3. (SPM.6) (pg25)
17. Identify **three** outcomes characterizing the development pathways towards sustainability. (SPM.6) (pg25)
18. Identify **three** co-benefits of accelerated climate action. (C.2.3) (pg26)

19. What are the **two** mitigation options for energy supply that would provide the greatest potential contribution to net emission reduction? (SPM.7) (pg27)
20. What are the **two** mitigation options for land, water and food that would provide the greatest potential contribution to net emission reduction? (SPM.7) (pg27)
21. Which mitigation option for land, water and food has the highest feasibility level up to 1.5 °C? (SPM.7) (pg27)
22. What are the **two** mitigation options for settlements and infrastructure that would provide the greatest potential contribution to net emission reduction? (SPM.7) (pg27)
23. What are the **two** mitigation options for industry and waste that would provide the greatest potential contribution to net emission reduction? (SPM.7) (pg27)
24. The graphic includes adaptation options under “society livelihood and economy” that do not contribute directly to emission reduction. Why is it still important to consider these factors? (SPM.7) (pg27)
25. What category has the greatest potential for demand-side mitigation options by 2050? (SPM.7) (pg27)
26. In C.3, it is stated with high confidence that “feasible, effective, and low-cost options for mitigation and adaptation are already available”. Identify **three** of these options. (C.3) (pg28)
27. What role does equity and inclusion play in mitigation and adaptation to climate change? (C.5) (pg31)
28. What role do governance and policies play in mitigation and adaptation to climate change? (C.6) (pg32)
29. What role do finance, technology and international cooperation play in mitigation and adaptation to climate change? (C.7) (pg33)
30. Discuss your thoughts on the evidence for climate change, the necessary steps to mitigate climate change and the resulting synergies that will result from climate mitigation. (13 pt opinion question)

