

ESS5 Final Review

Chapter 7 Precipitation Processes

- ☒ Forms of precipitation
- ☒ What is terminal velocity?
- ☒ What is Bergeron process about?
- ☒ What are riming, aggregation, collision-coalescence and where do they happen?

Chapter 8 Atmospheric Circulation and Pressure Distributions

- ☒ What is the three-cell model? What are the three cells?
- ☒ What is ITCZ?
- ☒ The polar front and jet streams
- ☒ How do we define the scales of the atmosphere? What is the order from largest to smallest?
- ☒ El Nino and Walker Circulation
- ☒ Major wind systems: Sea breezes, Monsoons and Santa Ana winds

Chapter 9 Air Masses and Fronts

- ☒ What are the classifications of air masses? Where are the source regions?
- ☒ Four kinds of front systems: cold front, warm front, stationary front and occluded front. And cloud types above the fronts.
- ☒ Arctic front vs. polar front

Chapter 10 Mid-latitude Cyclones

- ☒ The characteristics of mid-latitude cyclones
- ☒ The life cycle of a mid-latitude cyclone
- ☒ Difference between “mid-latitude” cyclones and “tropical” cyclones
- ☒ Earth (planetary) vorticity, relative vorticity and absolute vorticity
- ☒ Anticyclones

Chapter 11 Lightning, Thunder, and Tornadoes

- ☒ Processes of lightning formation
- ☒ cloud-to-cloud (sheet lightning) and cloud-to-ground lightning
- ☒ stepped-leader and dart leader, strokes, and flashes
- ☒ What is a thunderstorm and what is the requirement?
- ☒ air mass thunderstorms and severe thunderstorms
- ☒ What are Mesoscale convective complexes (MCC)?
- ☒ Downbursts and Microbursts
- ☒ The location and timing of tornadoes
- ☒ The Fujita scale

Chapter 12 Tropical Storms and Hurricanes

- ☒ Hurricane characteristics and hurricane season
- ☒ the eye and the eye wall of the hurricanes
- ☒ Storm surge
- ☒ Saffir-Simpson scale