Tips for Quiz 2

The following is a list of points that you should pay particular attention to studying. This is not a complete list of things that will be covered on the test, so be prepared to answer questions that this list doesn't cover. By in large, however, if you have a good understanding on the definitions, facts, concepts and processes below, you will do well on the test.

I. Atmosphere and Surface Energy Balance (Chapter 3)

- Energy pathways: transmission, scattering, refraction, albedo and reflection (Fig 3-5) need to know whether speed and direction change or not
- Cloud-albedo forcing (Fig 3-6), clouds and greenhouse (Fig. 3-8)
- Heat energy transfer: conduction, convection, advection, radiation (Fig 3-7)
- Processes controlling short and long wave radiation (Fig 3-10 - know processes, but do not memorize numbers)
- Total energy budget by latitude (Fig 3-11)
- A day's radiation budget (Net radiation) (Fig 3-12)

II. Global Temperatures (Chapter 3)

- Temperature Controls and Variations
  - Global variation with latitude (Fig 3-17)
  - Effects of elevation (Fig 3-18) remember the slide taken from La Paz
  - Land-Water heating differences (evaporation, transparency, specific heat, movement: Fig 3-20)
  - Continent/ocean effects (Fig 3-23)
  - Impacts of humans (the Greenhouse effect)
  - Local controls (composition of materials and reflectivity)
  - Urban heat island (Fig 3-30)

III. Atmospheric Circulations (Chapter 4)

- Driving forces: Pressure gradient force, Coriolis force, Friction force (Fig 4-8)
- Global wind and pressure belts (be able to draw where winds are!!!)
- Climate associated with major zones: (Fig 4-11, 4-13, 4-14)
  - Intertropical Convergence Zone: warm and muggy year round
  - North or south of ITCZ: warm with rainy season in summer as ITCZ moves north and south
  - Subtropical High: deserts
  - Westerlies on West coasts with cold ocean currents (like Oregon!): temperate with winter rain and summer dry as Subtropical High and Subpolar jet move north and south
  - Subpolar Low: cool moist conditions
  - Polar High: frigid, dry conditions
- On and off shore winds (Fig 4-18)
- Up an down valley winds (Fig 4-19)
- Monsoonal winds: causes and locations (Fig 4-20)