

## Tips for Quiz 1

***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. Overview (Chapter 1)

- The Science of Geography
  - 5 key themes of geography (Fig. 1.1)
  - Current emphasis in physical geography (earth systems approach)
- Earth Systems Concepts
  - Systems theory (Differences between open and closed systems)
  - Earth's four spheres (Fig 1-7)

### II. Earth-Sun Relationships (Chapter 2)

- Energy Movement via Radiation
  - Electromagnetic spectrum (Fig. 2-6, 2-7 short vs. longwave radiation)
  - Daily insolation (Fig. 2-9)
  - Migration of subsolar point
  - Shortwave radiation received by the Earth (Global net radiation, Fig. 2-10)
- The seasons
  - 5 reasons for seasons (see Fig 2-11, 2-12, 2-13)
    - Revolution (aphelion, perihelion)
    - Rotation (West → East or counterclockwise)
    - The tilt of axis (23.5° from the perpendicular to the plane of ecliptic)
    - Axial parallelism (North pole points always Polaris)
    - Sphericity (uneven receipt of insolation)
  - Key latitudes and noon sun angle in different seasons (e.g. at what latitude is the sun directly overhead at high noon on June 22?)
  - Noon sun angle formula ( $90 - \text{latitude} \pm \text{declination of the Sun}$ )
  - Circulation of illumination
  - Daylength

### III Earth's Atmosphere (Chapter 2)

- Atmospheric structure and composition (Fig 2-17)
  - 3 criteria used for classification of the atmosphere
  - Homosphere – what's the dominant gas?
  - Troposphere – normal lapse rate (6.4 °C / 1000m) (Fig 2-20)
  - Ozonosphere – stratospheric ozone depletion (Fig 2-21)
- Variable Atmospheric components
  - Sources of air pollution (natural vs. human)
  - Temperature inversion (Fig 2-24)