Chapter 4 Review Question Answers:

Section 1

1. The process by which natural forces break down rock
2. Ice wedging, pressure release, plant roots, moving water
3. They can cause rusting
4. Surface area: the more of a rock’s surface that is exposed, the faster the rock will weather

Rock composition: certain types of rock break down more quickly than others

Climate: temperature and moisture in a location affect the rate of weathering

1. It breaks up rocks and increases the surface area of the rock. More rock is exposed to air and water, so the rate of chemical weathering increases
2. No. The sculpture would be protected from rain, heat, and wind
3. Characteristics of weather, such as rain and temperature, help break down rock

Section 2

1. Weathered rock particles, organic matter, water, and air
2. Climate affects the rate and type of weathering that forms soil. Different types of soil form in different climates. Landforms may affect soil because soil can wash down slopes to flatter land during and after rainfalls
3. They decompose organic matter, help to cycle nutrients, mix and loosen soil, form humus as they decompose
4. Texture: size of weathered rock particles

Color: indication of content and water mobility

Pore space: spaces between particles

Chemistry: pH of soil

1. It would be more porous, and hold less water
2. On a plain, because nutrients would be carried away by rain on hilly land
3. Short shallow roots. There is only a thin layer of soil, and only the top part thaws out in the summer

Section 3

1. It sustains life by supporting plant growth, purifying water, recycling nutrients
2. These particles can result in the removal of plants and soil
3. Crop rotation: planting different crops in the same field at different times

Terraces and Contour Plowing: Prevent rainwater from running downhill

Windbreaks: trees planted to block wind

1. Flat land: likely caused by wind or by human activities

Sloping land: more influenced by natural processes

1. Avoid building on slopes, reuse plants and soil that are removed during construction to recover slopes, and use vegetation to reduce runoff
2. Strip cropping can help to prevent soil loss by slowing runoff. The long term consequences of soil loss are very severe because soil is a life sustaining resource.