Mineral Review

1. List the 4 main characteristics of all minerals:
   •
   •
   •
   •

2. Natural gas is a substance that occurs naturally in Earth’s crust. Is it a mineral? Explain your answer.

3. What two elements must all silicate minerals contain?

4. Name two examples of silicate minerals.

5. Complete the table below on the six major groups of nonsilicate minerals.

<table>
<thead>
<tr>
<th>Nonsilicate Group</th>
<th>Main Characteristic</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonates</td>
<td>Contain carbonate group ( \text{CO}_3 )</td>
<td></td>
</tr>
<tr>
<td>Halides</td>
<td>Contain chlorine or fluorine combined with sodium, potassium, or calcium</td>
<td>Fluorite ( \text{CaF}_2 )</td>
</tr>
<tr>
<td>Native elements</td>
<td>Contain oxygen bonded to an element other than Si</td>
<td>Silver ( \text{Ag} )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corundum ( \text{Al}_2\text{O}_3 )</td>
</tr>
<tr>
<td>Sulfates</td>
<td></td>
<td>Gypsum ( \text{CaSO}_4\cdot2\text{H}_2\text{O} )</td>
</tr>
<tr>
<td>Sulfides</td>
<td>Contain sulfur, but no oxygen</td>
<td></td>
</tr>
</tbody>
</table>

Matching: In the space provided, write the letter of the definition that best matches the term or phrase.

6. luster
   A. the tendency of a mineral to break into irregular, uneven surfaces

7. fracture
   B. the tendency of a mineral to split to form smooth, flat surfaces

8. streak
   C. the way a mineral’s surface reflects light

9. cleavage
   D. the color of a mineral in powdered form

10. hardness
    E. the measure of the ability of a mineral to resist scratching
11. Using page 111 in your textbook, complete the table below.

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Hardness</th>
<th>Common test</th>
<th>Mineral</th>
<th>Hardness</th>
<th>Common test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>1</td>
<td>easily scratched by fingernail</td>
<td>Feldspar</td>
<td>6</td>
<td>scratches glass, but does not scratch steel</td>
</tr>
<tr>
<td>Gypsum</td>
<td>2</td>
<td></td>
<td></td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>barely can be scratched by copper penny</td>
<td>Topaz</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Fluorite</td>
<td>4</td>
<td>easily scratched with steel file or glass</td>
<td>Corundum</td>
<td>9</td>
<td>scratches topaz</td>
</tr>
<tr>
<td>Apatite</td>
<td>5</td>
<td>can be scratched by steel file or glass</td>
<td></td>
<td>10</td>
<td>scratches everything</td>
</tr>
</tbody>
</table>

12. The chart above shows the Mohs scale for measuring the hardness of minerals. A mineral that can scratch fluorite and can be scratched by feldspar is able to –

A. scratch both calcite and quartz  
B. be scratched by both calcite and quartz  
C. scratch calcite and be scratched by quartz  
D. scratch quartz and be scratched by calcite

13. Which mineral will scratch fluorite, but not topaz?

A. calcite  
B. diamond  
C. quartz  
D. talc

14. A fingernail will scratch which of the following minerals?

A. diamond  
B. quartz  
C. talc  
D. topaz

15. Which mineral can scratch all other minerals?

A. diamond  
B. quartz  
C. talc  
D. topaz

16. Which mineral is easily identified by smell?

A. galena  
B. pyrite  
C. quartz  
D. sulfur

17. Cyanite (Al₂SiO₅), quartz (SiO₂), and leucite (KAlSi₂O₆) may be grouped together because they all contain –

A. aluminum  
B. carbon  
C. potassium  
D. silicon

18. Which of the following is the most abundant element in Earth’s crust?

A. carbon  
B. nitrogen  
C. oxygen  
D. silicon