LABORATORY #13: Metamorphic Rock Identification

Objective: You will investigate the properties by which metamorphic rocks can be identified.

Materials: Earth Science Reference Tables and rock samples

Procedure: Complete the report sheet using your samples, the scheme for Metamorphic Rock Identification and any reference material provided.

PART A:

Questions:

10. How do metamorphic rocks form by contact metamorphism?

17. Why do you seldom find fossils in metamorphic rocks?

18. Why do minerals in metamorphic rocks often rearrange in layers?

19. Many gneissese are believed to have formed from granites. Compare the minerals that occur in gneiss with those that occur in granite.

20. What sedimentary rock does slate most closely resemble?

21. Which rock was exposed to higher grade of metamorphism? Phyllite or Schist? How can you tell?

22. On what basis can metamorphic rocks be identified?

PART B:

Match the following terms with the definitions below:

D) Contact Metamorphism
E) Regional Metamorphism
H) Recrystallization
I) Foliation
J) Banding

8. Mineral alignment caused by heat and pressure applied to rock found in many metamorphic rocks.

9. Rock changing by close proximity to magma or lava

10. Minerals chemically changing from one to another due to heat and pressure
11. Separation of light and dark colored minerals typically found in granite.

12. Rock changed over a large area typically caused by continental collision.

**PART C:**

Using the ESRT and rock samples complete the chart below.

<table>
<thead>
<tr>
<th>Foliated or Nontoliated</th>
<th>If Foliated, Give Type</th>
<th>Type of Metamorphism (Contact/Regional)</th>
<th>Probably Original Rock</th>
<th>Rock Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nontoliated</td>
<td></td>
<td>Contact or Regional</td>
<td>Sandstone</td>
<td>Marble</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contact or Regional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foliated</td>
<td>Schistose</td>
<td>Regional</td>
<td>Shale or other possible rocks, igneous or Sedimentary Felsic igneous rocks, Sandstone with Feldspar</td>
<td></td>
</tr>
<tr>
<td>Foliated</td>
<td>Gneissic</td>
<td>Regional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontoliated</td>
<td></td>
<td>Contact Only</td>
<td></td>
<td>Conglomerate</td>
</tr>
</tbody>
</table>