Quiz #1

1) In Jim’s estimation, what are the two most important elements on a geologic map and why? (2 pts)
   A) Authors
   B) Date

2) Name two elements on a geologic map that would be considered “facts” (as opposed to interpretations) (2 pts)
   A) Outcrop
   B) Structure

3) Name three elements on map that would be considered optional components. (1.5 pts)
   A) Cross Section, geophysical, geochem, Explanatory notes, geotectonic setting figure, air photo...
   B)
   C)

4) Circle the statements that are true about map units (2 pts)
   A) Map units are always composed of a singular rock type
   B) The lithologic components that constitute a map unit are chosen by the mapper
   C) Lumping is better than splitting
   D) In the Description of Map Units, the oldest units are described first.

5) What is the only rule that applies to the construction of a Correlation of Map Units diagram? (1 pt)
   Time youngs upward

6) What is the main principle by which we tell relative time in: (1 pt)
   A) lithostratigraphic units? Superposition
   B) lithodemic units? Cross Cutting Relationships

7) Name two features that indicate the up direction in lithostratigraphic units (1 pts)
   A) graded bedding, ripple marks, cross bedding, flame structures, stromatolites,...
   B) amygdule zones, pipe amygdules, pillows, ...

8) Circle the correct statements about time and rock units (2 pts)
   A) Although map units may be composed of various rock types, they formed in a common geological environment, by similar processes and are approximately the same age
   B) Index fossils are those that had a limited time existence and are found in many depositional environments.
   C) Unconformities always indicated a gap in time recorded in the rocks.
   D) Lithostratigraphic packages are typically correlative with biostratigraphic packages, especially over large areas.
9) Match the definition to the type of unconformity (1.5 pts)

__A__ Disconformity  
A) a plane representing a time gap between two similar rock types

__C__ Angular Unconformity  
B) a plane representing a time gap between two dissimilar rock types

__B__ Nonconformity  
C) a plane representing a time gap wherein the underlying strata are discordant with the orientation of the plane

10) Name two types of global time markers (1 pt)

A) volcanic ash layer, meteor impact layers, magnetic reversals, global climate change,

B)

11) In the figure, label the stratigraphic sequence of sedimentary rocks formed and the depositional environments they represent by sea level transgression (3 pts)

<table>
<thead>
<tr>
<th>Rock Types</th>
<th>Depositional Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone</td>
<td>Carbonate Reef</td>
</tr>
<tr>
<td>Shale</td>
<td>Off-shore deeps</td>
</tr>
<tr>
<td>Sandstone</td>
<td>Beach, delta, dune field</td>
</tr>
</tbody>
</table>

12) Match the Fundamental Geological Unit to its Stratigraphic Class (2 pt)

___D__ Lithostratigraphic Unit  
A. Member  
E. Intrusion

___E__ Lithodemic Unit  
B. Biozone  
F. Geosol

___F__ Pedostratigraphic Unit  
C. Group

___B__ Biostratigraphic Unit  
D. Formation

13) Circle the true statements about grid systems shown on 7.5’ topographic maps (2 pt)

A) Lat/Lon grid is difficult to use because it is reported in degrees, minutes and seconds

B) A UTM grid suffers from having severe distortion at the fringes of the map

C) TRS grids are notoriously non-orthogonal because they were surveyed in on the ground

D) The Minnesota Coordinate System is 10,000’ grid that has limited utility

14) Label an example of the following features on the topographic map (as demonstrated by the first feature (3 pts)

A – Swamp/Marsh

B - Township corner

C – Surveyed elevation

D - Steep slope

E – Crest of elongate hill

F – Dry valley

G – Depression