**ES302 Reading Review Questions Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Preparation of Geologic Maps**

**Part 1. Video Review Exercise. What the Youtube Video (9 min) on the “Basics of Geologic Mapping” at the following URL and answer the questions below:**

<https://www.youtube.com/watch?v=qdz9DN74ukY>

1. True or False: Planet Earth is a geologically active and dynamic planet.
2. What is the purpose of a geological map? What type of information does it provide.
3. What types of real-world applications do geologic maps provide information for?
4. What is a “stereoscope”, what is it used for? What types of information are provided by aerial photographs.
5. What is a “station” and what types of information are collected at these localities.
6. True or False: the exact location and date on which stations are visited is unimportant.
7. List the three primary types of rocks, with a brief explanation of how they are formed.
8. What does the term “orogeny” mean?
9. What do the terms “strike” and “dip” mean, and how are they measured in the field.
10. What types of data are illustrated on geologic maps.
11. List two of the primary methods for rock age dating and determining how a rock unit is, time since it was created.
12. True or False: computer generated cross-sections and 3-dimensional models are sweet.
13. What is the primary philosophy of why geologists map the Earth?

**Part 2. Read the chapter on Preparation of Geologic Maps, located for download at the following URL on the class web site:**

[https://people.wou.edu/~taylors/g302/Ch3\_Preparation\_Geo\_Maps.pdf](https://people.wou.edu/~taylors/g302/Ch1_Intro_Geo_Maps.pdf)

Using the reading resource and ancillary internet search tools (google, Wikipedia, etc.), answer the following questions.

1. Read the first paragraph on p. 29, in two or three sentences, summarize the key philosophy and outcomes associated with Geologic Mapping.
2. List and summarize the three preliminary steps in preparing to conduct a Geologic Mapping campaign.
3. What are two types of base maps or images that are used for geologic mapping? Of all the map scales used in the U.S. commonly, which map scale would provide the most detailed coverage of land area? Which map scale would provide the least detailed coverage of land area?
4. What is the purpose of reconnaissance mapping and what is the biggest pit fall.
5. What is the primary objective in geologic map data collection?
6. What are the two techniques applied to geologic traverses and data collection.
7. List our topographic locations where you are most likely to find bedrock outcrop exposed for examination.
8. What does the phrase “tracing the contact” mean in terms of geologic mapping.
9. What types of field observations are commonly observed and recorded in a field notebook.
10. List and briefly discuss three simple “analog” old school (low technology) methods that are used to determine your location in the field.
11. List and briefly discuss three “new school” technology-enhanced methods that are used to determine your location in the field and to assist with mapping.
12. Examine Figure 3-2 on p. 37, a visual explanation of how rock units are defined in outcrop; and read the explanatory text. Describe the primary differences between stratigraphic units of bedrock referred to as Formation, Group, and Member. Draw a sketch or included an image to illustrate your answer.
13. Examine Figures 3-3 and 3-4 on p. 38, and read the explanatory text. Define the following terms and provide a sketch illustrating your answer:
    1. Strike
    2. Dip
    3. Plunge
    4. Declination
    5. Bedding Plane
14. List two types of field compasses that are used for measuring strike and dip in the field.
15. Examine Figure 3-9 (parts a, b, c, d) on p. 43-44. List the four main steps in preparing a draft geologic map.
16. List the 12 essential elements on a comprehensive geologic map checklist.