

### EXAM INFORMATION

This exam was developed to enable schools to award credit to students for knowledge equivalent to that learned by students taking the course. This examination includes core knowledge, surface processes, tectonic earth processes and applications.

The exam contains 100 questions to be answered in 2 hours. Some of these are pretest questions that will not be scored.

**Form Codes:** SQ303, SR303

### CREDIT RECOMMENDATIONS

The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated the DSST test development process and content of this exam. It has made the following recommendations:

**Area or Course Equivalent:** Introduction to Geology

**Level:** 3 Lower Level Baccalaureate

**Amount of Credit:** 3 Semester Hours

**Minimum Score:** 400

**Source:** [www.acenet.edu](http://www.acenet.edu)

### EXAM CONTENT OUTLINE

The following is an outline of the content areas covered in the examination. The approximate percentage of the examination devoted to each content area is also noted.

#### I. Core Knowledge – 30%

- a. Earth Materials: Minerals and Rocks
- b. Igneous Rocks: Intrusive, Extrusive
- c. Sedimentary Rocks: Characteristics, Interpretation
- d. Metamorphic Rocks
- e. Rock Cycle
- f. Plate Tectonics: Geomagnetism, Plate Boundaries, Plate Movements

#### II. Surface Processes – 30%

- a. Weathering and Soil
- b. Mass Wasting
- c. Streams and Floods
- d. Groundwater and Karst
- e. Glaciers and Glaciation
- f. Oceanic and Coastal Systems
- g. Deserts and Wind
- h. Hydrologic Cycle

#### III. Tectonic Earth Processes – 30%

- a. Geologic Time: Planetary Geology, Relative Time, Absolute Time, Field Relations
- b. Structural Geology: Folding, Faulting, Mountain Building
- c. Volcanoes and Volcanic Hazards
- d. Geophysics: Earthquakes and seismology, interior of the earth, gravity and isostasy

#### IV. Applications – 10%

- a. Mineral and energy resources
  - b. Environmental geology
  - c. Climate change
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## REFERENCES

Below is a list of reference publications that were either used as a reference to create the exam, or were used as textbooks in college courses of the same or similar title at the time the test was developed. You may reference either the current edition of these titles or textbooks currently used at a local college or university for the same class title. It is recommended that you reference more than one textbook on the topics outlined in this fact sheet.

You should begin by checking textbook content against the content outline provided before selecting textbooks that cover the test content from which to study.

1. Fletcher, Charles (2014). *Physical Geology: The Science of Earth*. Wiley, 2<sup>nd</sup> edition.
  2. Plummer C., Carlson, D. and Hammersley L. (2015). *Physical Geology*. Mc Graw-Hill Higher Education, 15<sup>th</sup> edition.
  3. Reynolds, S., Johnson J., Morin, P. and Carter C. (2015). *Exploring Geology*. Mc Graw-Hill, 4<sup>th</sup> edition.
  4. Tarbuck E.J., Lutgens, F. K. and Tasa, D.G. (2017). *The Earth: An Introduction to Physical Geology*. Pearson, 12<sup>th</sup> edition.
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## SAMPLE QUESTIONS

All test questions are in a multiple-choice format, with one correct answer and three incorrect options. The following are samples of the types of questions that may appear on the exam.

1. Which of the following minerals would form under the highest temperature conditions (according to the Bowen Reaction Series)?
  - a. Quartz
  - b. Olivine
  - c. Orthoclase feldspar
  - d. Biotite mica
2. Which of the following is an igneous rock that cooled slowly, and which is formed primarily of orthoclase feldspar and quartz with some plagioclase feldspar?
  - a. Diorite
  - b. Basalt
  - c. Granite
  - d. Gneiss
3. Which of the following is most likely to be layered and to contain marine fossils?
  - a. Till
  - b. Gneiss
  - c. Alluvium
  - d. Shale

4. Which of the following steam patterns would be most likely to develop homogeneous rocks that are nearly horizontal?
  - a. Trellis
  - b. Radial
  - c. Concentric
  - d. Dendritic
5. Which of the following features may be found as a result of glacial activity in both alpine and continental settings?
  - a. Terminal moraine
  - b. Drumlin
  - c. Cirque
  - d. Horn
6. Which of the following would result in long shore transport?
  - a. Waves approaching the beach directly
  - b. Waves approaching the beach at an angle
  - c. Movement of deep ocean currents
  - d. Wind blowing sand
7. Of the following geologic periods, which is the most recent?
  - a. Triassic
  - b. Cambrian
  - c. Permian
  - d. Tertiary
8. The type of fold illustrated above is which of the following?
  - a. Northward plunging anticline
  - b. Southward plunging anticline
  - c. Northward plunging syncline
  - d. Southward plunging syncline
9. The fact that secondary earthquake waves (S- wave) do not pass through the core of the Earth suggests that the
  - a. outer core is liquid
  - b. mantle is denser than the core
  - c. mantle is less dense than the core
  - d. crust is of different thickness at different locations
10. The presence of fossilized ripple marks in rock indicates that the rock is
  - a. volcanic
  - b. igneous
  - c. sedimentary
  - d. metamorphic
11. Which of the following physical properties of minerals can be used to distinguish easily between calcite and quartz?
  - a. Color
  - b. Luster
  - c. Streak
  - d. Hardness

Answers to sample questions:

1-B; 2-C; 3-D; 4-D; 5-A; 6- B; 7-D; 8-A; 9-A; 10-C; 11-D