

# DANTES

## Subject Standardized Tests

## Fact Sheet Study Guide

### **PHYSICAL GEOLOGY**

#### TEST INFORMATION

This test was developed to enable schools to award credit to students for knowledge equivalent to that which is learned by students taking the course. The school may choose to award college credit to the student based on the achievement of a passing score. The passing score for each examination is determined by the school based on recommendations from the American Council on Education (ACE). This minimum credit-awarding score is equal to the mean score of students in the norming sample who received a grade of C in the course. Some schools set their own standards for awarding credit and may require a higher score than the ACE recommendation. Students should obtain this information from the institution where they expect to receive credit.

#### CONTENT

The following topics, which are commonly taught in courses on the subject, are covered by this examination.

	<u>Approximate Percent</u>		<u>Approximate Percent</u>
I. Core Knowledge	35%	II. Surface Processes	30%
A. Earth Materials		A. Weathering	
B. Minerals		B. Mass wasting	
C. Igneous rocks		C. Streams	
1. Intrusive		D. Groundwater	
2. Extrusive		E. Glaciers	
D. Sedimentary rocks		1. Alpine	
1. Characteristics		2. Continental	
2. Interpretation		F. Oceanic systems	
E. Metamorphic rocks		1. Ocean basins	
F. Rock cycle		2. Coasts	
G. Planetary geology		G. Deserts and wind	
		H. Hydrologic cycle	
		III. Internal Earth Processes	30%
		A. Geologic time	
		1. Relative time	
		2. Absolute time	
		3. Field relations	
		B. Structural geology	
		1. Folding	
		2. Faulting	
		3. Mountain building	
		C. Geophysics	
		1. Earthquakes and seismology	
		2. Interior of the Earth	
		3. Gravity and isostasy	
		D. Plate tectonics	
		1. Geomagnetism	
		2. Plate boundaries	
		3. Plate movements	
		IV. Applications	5%
		A. Mineral and energy resources	
		B. Environmental geography	



Questions on the test require candidates to demonstrate the following abilities. Some questions may require more than one of the abilities.

- (C) Concentric
- (D) Dendritic

- Knowledge of basic facts and terms  
(about 75 percent of the examination)
- Understanding of concepts and principles  
(about 25 percent of the examination)

### SAMPLE QUESTIONS

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?

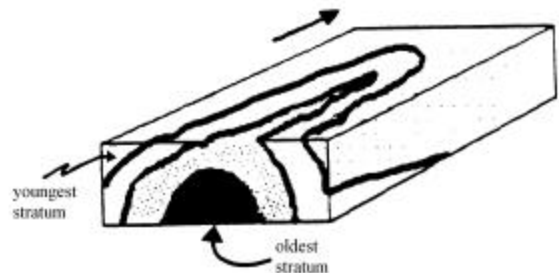
- (A) Diorite
- (B) Basalt
- (C) Granite
- (D) Gneiss

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



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 longshore 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 more dense 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

## STUDYING FOR THE EXAMINATION

The following is a list of reference publications that were being used as textbooks in college courses of the same or similar title at the time the test was developed. Appropriate textbooks for study are not limited to those listed below. If you wish to obtain study resources to prepare for the examination, you may reference either the current edition of the following 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** included on the front page of this Fact Sheet/Study Guide **before** selecting textbooks that cover the test content from which to study. Textbooks may be found at the campus bookstore of a local college or university offering a course on the subject.

Sources for study material suggested but not limited to the following:

Hamblin, W. Kenneth. *Earth's Dynamic Systems*. New York: MacMillan Publishing Company, current edition.

Judson, Sheldon and Marvin E. Kauffman. *Physical Geology*. Englewood Cliffs, NJ: Prentice-Hall, Inc., current edition.

Larson, Edwin E. and Peter W. Birkeland. *Putnam's Geology*. New York: Oxford University Press, current edition.

McGeary, David and Charles C. Plummer. *Physical Geology: Earth Revealed*. Dubuque, IA: William C. Brown Publishers, current edition.

Montgomery, Carla W. *Physical Geology*. Dubuque, IA: William C. Brown Publishers, current edition.

Plummer, Charles C. and David McGeary. *Physical Geology*. Dubuque, IA: William C. Brown Publishers, current edition.

Press, Frank and Raymond Siever. *Earth*. New York: W.H. Freeman, current edition.

Skinner, Brian J. and Stephen C. Porter. *The Dynamic Earth: An Introduction to Physical Geology*. New York: MacMillan, current edition.

Spencer Edgar Winston. *Physical Geology*. Reading, MA: Addison-Wesley Publishing Company, current edition.

Tarback, Edward J. and Frederick K. Lutgens. *The Earth: An Introduction to Physical Geology*. New York: MacMillan, current edition.

Current textbook used by a local college or university for a course on the subject.

## CREDIT RECOMMENDATIONS

The Center for Adult Learning Educational Credentials of the American Council on Education (ACE) has reviewed and evaluated the DAN TES test development process and has made the following recommendations:

Area or Course Equivalent:	Physical Geology
Level:	Lower level baccalaureate
Amount:	Three (3) semester hours
Source:	ACE Commission on Educational Credit and Credentials

## INFORMATION

Colleges and universities that would like to review copies of tests, have additional information about the national norming, or assistance in local norming or score validation studies should write to: DAN TES Program, Mail Stop 11-P, The Chauncey Group International, 664 Rosedale Road, Princeton, New Jersey 08540.

It is advisable that schools develop a consistent policy about awarding credit based on scores from this test and that the policy be reviewed periodically. The Chauncey Group will be happy to help schools in this effort.

Correct responses to sample questions: 1B; 2C; 3D; 4D; 5A; 6B; 7D; 8A; 9A; 10C; 11D.