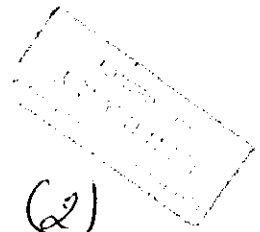




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American University of Beirut
Department of Geology
Geol 101(2) The Earth, Present and Past (Environmental Geology) (2)
Final Exam

NAME: _____

Fall 1999-2000

- (10 points) 1. Multiple-Choice Questions. Circle the letter of the correct answer on the provided sheet.
- 1) Deflation is a process of
a) erosion b) abrasion c) deposition d) none of these
 - 2) "Oil-hungry" microorganisms can be used to control
a) low-level radioactive waste b) desertification
c) particulates d) none of these
 - 3) A major source of groundwater pollution in Lebanon
a) municipal sewage b) radioactive waste
c) mining activities d) none of these
 - 4) Which of the following is NOT a process included in the hydrologic cycle?
a) Infiltration b) Erosion c) Evaporation d) Runoff
 - 5) Smog is the major environmental hazard of this gas
a) nitrogen dioxide (NO₂) b) nitrogen monoxide (NO)
c) carbon monoxide (CO) d) all of these
 - 6) Particulates are produced by
a) coastal flooding b) carbonic acid
c) acid rain d) none of these
 - 7) Secondary treatment of municipal sewage usually involves _____ treatment
a) chemical b) physical c) biological d) none of these
 - 8) Reversing the pollution of surface water can be accomplished by adding salts of _____ to the polluted water.
a) sodium b) calcium c) magnesium d) none of these
 - 9) In general, the pH of natural precipitation is
a) slightly less than 7 b) 7 c) slightly greater than 7
 - 10) The upper boundary of an unconfined aquifer.
a) An impermeable rock b) An aquiclude
c) The water table d) None of these

(20 points) 2. Fill in the blanks below.

1) The following rock types have been considered for the disposal of radioactive waste: granite, basalt, _____, _____, and _____.

2) _____, _____, and _____ are toxic gases emitted by volcanoes.

3) Channelization can be accomplished by _____ the stream channel, or _____ to provide a direct path for water flow.

4) Changes in groundwater _____ and _____ can be used as precursors of earthquakes.

5) Major environmental problems that can be caused by global warming are _____, _____, _____, and _____.

6) The two types of surface mines are _____ and _____.

7) Ozone in the upper atmosphere can be destroyed by the components of the exhaust of _____.

8) _____ can be used to artificially recharge unconfined but not confined aquifers.

9) The capacity of a stream is determined by _____, whereas the competence of a stream is determined by _____.

(20 points) 3.

(12 points) A. Define the following terms:
tailings

ventifact

leachate

(8 points) B.

Draw diagrams to illustrate (a) seawater intrusion (b) an effluent stream. Clearly label your diagrams.

(a) seawater intrusion

(b) effluent stream

(30 points) 4. Answer the following questions.

(8 points) A. List the disposal methods that are used for liquid wastes produced by industrial processes.

(6 points) B. Explain how oxygen isotopes are used to reconstruct past climate.

(4 points)

C. Oil spills in rough seas can be controlled by certain methods. What are these methods?

(6 points)

D. Explain how the water content of unconsolidated sediments influences their mass movement.

(6 points)

E. List and explain all the volcanic precursors discussed in class.

(20 points)

5.

Write an essay on the major environmental problems that can be caused by strip-mining.