

*Geol 101 (2)*



American University of Beirut  
Department of Geology

The Earth, Present and Past (Environmental Geology) 101  
Final Exam

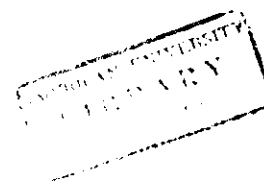
(2)

NAME: \_\_\_\_\_

Spring 1999

(22 ½ points) 1. Multiple-Choice Questions. Circle the letter of the correct answer on the provided sheet.

- 1) Which of the following is NOT a process included in the hydrologic cycle?  
a) Infiltration    b) Erosion    c) Evaporation    d) Runoff
- 2) Smog is the major environmental hazard of this gas  
a) nitrogen dioxide (NO<sub>2</sub>)    b) nitrogen monoxide (NO)  
c) carbon monoxide (CO)    d) all of these
- 3) A seismic sea wave  
a) Tsunami    b) Breakwater    c) Lahar    d) None of these
- 4) Prevention of mass wasting can be accomplished by  
a) fluid removal    b) retaining walls  
c) slope reduction    d) all of these
- 5) Secondary treatment of municipal sewage usually involves  
a) chemical treatment    b) physical treatment  
c) (a) and (b)    d) biological treatment
- 6) Particulates are produced by  
a) burning of vegetation    b) combustion of coal  
c) (a) and (b)    d) none of these
- 7) Wind deposits include  
a) loess    b) deltas    c) alluvial fans    d) none of these
- 8) A major source of groundwater pollution in Lebanon  
a) municipal sewage    b) radioactive waste  
c) mining activities    d) none of these
- 9) Deflation is a process of  
a) erosion    b) transportation    c) deposition    d) none of these
- 10) "Oil-hungry" microorganisms can be used to control  
a) oil spills    b) acid rain    c) particulates    d) land subsidence
- 11) This gas may escape from improperly designed landfills  
a) hydrogen sulfide (H<sub>2</sub>S)    b) methane (CH<sub>4</sub>)  
c) (a) and (b)    d) none of these
- 12) Mineral-smelting operations emit vapors of  
a) mercury    b) arsenic    c) (a) and (b)    d) none of these
- 13) Air pollution is caused by  
a) particulates    b) oxides of nitrogen  
c) (a) and (b)    d) none of these
- 14) \_\_\_\_\_ erode by abrasion.  
a) Winds    b) Streams    c) (a) and (b)    d) None of these
- 15) Seismic waves are produced by  
a) wind erosion    b) stream floods  
c) (a) and (b)    d) none of these



(22 ½ points) 2. True/False Questions. On the provided answer sheet, circle the letter A if the answer is True, or B if the answer is False.

- 16) The upper boundary of a confined aquifer is the water table.
- 17) Fissure eruptions are discharged through cracks or fractures.
- 18) Composting means burning of solid waste.
- 19) Natural precipitation is slightly acidic.
- 20) Aquicludes are beds (sediments or rocks) that store and transmit groundwater in sufficient quantities to supply wells.
- 21) The rate of movement of earthflows is much slower than that of mudflows.
- 22) The greenhouse effect is mainly caused by carbon monoxide in the atmosphere.
- 23) Talus is produced by tertiary treatment of municipal sewage.
- 24) Radioactive elements with long half-lives pose greater hazard than those with short half-lives.
- 25) In general, volcanic ash and gases increase the Earth's temperature by 2 to 3 °C.
- 26) Downstream floods usually last longer than upstream floods.
- 27) Release of chlorofluorocarbons (CFCs) into the atmosphere increases the thickness of the ozone layer.
- 28) An extinct volcano is one that is inactive at present but may erupt again in the future.
- 29) An earthquake of magnitude 4 causes 10 times as much ground movement as one of magnitude 3.
- 30) Coal waste reacts with water and air (oxygen) to produce surface runoff containing nitric acid.

(15 points) 3. Fill in the blanks below.

- 1) Major coastal hazards include \_\_\_\_\_ , \_\_\_\_\_ , and \_\_\_\_\_ .
- 2) Groundwater aquifers are classified into \_\_\_\_\_ and \_\_\_\_\_ .
- 3) Acid rain is mainly caused by these two acids: \_\_\_\_\_ and \_\_\_\_\_ .
- 4) Overpumping of groundwater leads to the following problems: \_\_\_\_\_ , \_\_\_\_\_ , and \_\_\_\_\_ .

(14 points) 4. Define the following terms.

Submergent coast

Delta

Unstaured zone

Seismic body waves

(10 points) 5. List the major environmental problems that can be caused by global warming?

(16 points) 6. Write an essay on the artificial recharge of groundwater.