

# Mineral Exploration & Mining

## I. Mineral Exploration

1. When are conditions right to open a mine?

2. List the steps for locating ore deposits.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

## II. Subsurface Mining

1. Define the term subsurface mining.

Subsurface Mining -

2. List three types of subsurface mining.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

3. Match the subsurface mining techniques to the correct definitions.

1. \_\_\_\_\_ - shearer machine moves back and forth transporting coal on a conveyor
2. \_\_\_\_\_ - hot water is injected to dissolve an ore and is removed with compressed air
3. \_\_\_\_\_ - rooms are cut into a seam and pillars of coal support the roof

a. room-and-pillar mining

b. longwall mining

c. solution mining

## III. Surface Mining

1. Define the term surface mining.

Surface Mining -

2. List four types of surface mining.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**3. Match the surface mining techniques to the correct definitions.**

1. \_\_\_\_\_ - aggregates such as sand, gravel, and crushed rock are extracted
  2. \_\_\_\_\_ - ore is mined downward, layer by layer
  3. \_\_\_\_\_ - sea water placed in shallow ponds evaporate and form salt crystals
  4. \_\_\_\_\_ - soil & overburden removed; exposed coal extracted; soil & overburden refilled
- a. open-pit mining      b. surface coal mining      c. quarrying      d. solar evaporation

**IV. Placer Mining**

**1. Define the term placer deposits.**

Placer Deposits -

**2. Where do placer deposits tend to accumulate?**

**3. What type of equipment is used to extract placer deposits?**

\_\_\_\_\_

**V. Smelting**

**1. List the steps of how molten metal is extracted using smelting?**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**VI. Undersea Mining**

**1. List four mineral resources located on the ocean floor.**

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

**2. What are two reasons that undersea mining is not successful?**

1. \_\_\_\_\_
2. \_\_\_\_\_