

**QUIZ 1: ANSWER KEY AT END**

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

EE/Econ 458

Quiz 1: 6 Questions (6 Points Total)

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**QUIZ INSTRUCTIONS:**

- (1) Please fill in your complete name in the indicated space at the top of this quiz sheet. **BE SURE TO WRITE CLEARLY.**
- (2) For each question below, circle the answer that you think is correct.
- (3) Each question Q1 through Q6 is worth 1 point.

**Q1.** In electric power systems, **POWER** is defined to be \_\_\_\_\_ and its standard unit of measurement is \_\_\_\_\_.

- A. the degree of control over grid operations; the operational budget (\$)
- B. the flow (instaneous consumption) of energy at a point in time; watts (W)
- C. the heat content of fuels; British Thermal Units (Btu)
- D. the amount of energy used during a given period of time; watt-hours (Wh)

**Q2.** In the U.S., the most commonly used fuel for the generation of electric power is \_\_\_\_\_.

- A. natural gas
- B. nuclear energy
- C. coal
- D. oil

- Q3. By definition, a VERTICALLY INTEGRATED UTILITY is a utility that \_\_\_\_.
- A. owns generation plants, a transmission network, and a distribution network for (retail) customer service
  - B. is organized as a private corporation owned by shareholders
  - C. owns many different generation plants across a wide geographical area
  - D. owns its own sources of fuel for the generation of electric power
- Q4. By definition, a WHOLESALE POWER MARKET is a market \_\_\_\_.
- A. in which all buyer/seller transactions take the form of bilateral trades.
  - B. in which buyers purchase electric energy from sellers and hold this energy in inventory for later resale.
  - C. in which buyers purchase forward contracts for capacity energy reserves from a market operator
  - D. in which buyers purchase electric power from sellers for resale to “down-stream” retail customers.
- Q5. The U.S. wholesale (high voltage) electric power transmission grid consists of \_\_\_\_.
- A. MISO, ISO-NE, NYISO, PJM, CAISO, and SPP
  - B. the Eastern Interconnection, Western Interconnection, and Texas Interconnection
  - C. 50 separate transmission networks operated by the 50 U.S. states
  - D. a distribution network and a retail network servicing final customers
- Q6. Many commentators agree that key problems hampering the restructuring of wholesale power markets into more “competitive” markets in which prices are determined by demand and supply conditions include \_\_\_\_.
- A. it is not possible to separate generation from control of transmission assets.
  - B. it is not possible to price electric power because it cannot be economically stored
  - C. the transmission grid must remain highly regulated to ensure open access
  - D. the most efficient form of organization is the vertically integrated utility
  - E. both B and C

ANSWER KEY: Q1-B; Q2-C; Q3-A; Q4-D; Q5-B; Q6-C