

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
ELECTRICAL ENGINEERING DEPARTMENT

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EE-360 (151)

Key Solutions

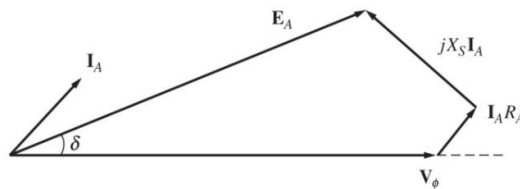
Quiz # 4 Sec. Serial # Name: I.D.#

Circle the correct answer.

1) Two synchronous generators are running in parallel on a 50-Hz system. The first one has 4-poles and the second one has 6-poles. The speeds they both should run at, if moved to a 60-Hz system, respectively are (4 Marks)

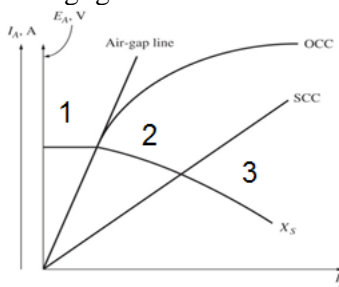
- a. **1800 rpm and 1200 rpm.**
- b. 1500 rpm and 1000 rpm.
- c. they should run at same speed.
- d. None of above.

2) The phasor diagram shown below is for (2 Marks)



- a. **an under-excited synchronous generator.**
- b. an under-excited synchronous motor.
- c. an over-excited synchronous generator.
- d. an over-excited synchronous motor.

3) The unsaturated X_S can be obtained, assume negligible armature resistance, (2 Marks)



- a. **from OCC & SCC for same field current in area marke 1 in above figure.**
- b. from OCC & SCC for any field current in area marke 1 in above figure.
- c. from OCC & SCC for same field current in area marke 2 in above figure.
- d. from OCC & SCC for any field current in area marke 3 in above figure.

4) Synchronous motor can be used for power factor correction. It can provide reactive power, if (2 Marks)

- a. **the machine is over excited under consatnt active power.**
- b. the machine is under excited under consatnt active power.
- c. the machine is over excited under consatnt field current.
- d. the machine is under excited under consatnt field current.