ESS30 – Beginning Photovoltaic Systems

Study Guide for Final Exam – Chapters 9-15

1) Read All Chapters

2) Read Chapter Summaries

3) Study Chapter Definitions

4) Study Chapter Review Questions / Homework Questions

5) Review CD-ROM Media Clips

6) Review CD-ROM Chapter Flash Cards

7) Review CD-ROM Quick Quizzes

8) Review and Practice Ohms Law handouts & problems, Series vs. Parallel problems, Battery Amp Hour problems, Compact Fluorescent vs. Incandescent, NABCEP Practice Problems

9) Review Class Quizzes

10) Review Class Notes

Exam will be 65-70 Questions and comprised of approx.:

- 30-40 Multiple Choice
- 15-25 Fill-in
- 10-20 Ohms Law / Series vs. Parallel Problems, Battery Amp Hour Problems, CF vs. Incandescent (from ALL Chapters), NABCEP Practice Problems

Sample Questions:

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

____ 1. ___ systems can be sized according to either the stand-alone methodology or the interactive methodology.
   a. Hybrid
   b. Interactive
   c. Bimodal
   d. Stand-alone

____ 2. ___ is the percentage of time a load is operating.
   a. Operating period
   b. Duty cycle
   c. Active phase
   d. Load time

____ 3. The ___ ratio is the ratio of electrical energy demand to average insolation during a period.
   a. critical design
   b. energy-insolation
   c. power demand
   d. worst-case

____ 4. The DC voltage for battery-based PV systems is usually an integer multiple of ___ V.
   a. 5
   b. 10
   c. 12
   d. 15

____ 5. System ___ is the percentage of time over an average year that a stand-alone PV system meets the system load requirements.
   a. autonomy
   b. availability
   c. efficiency
   d. functionality

Completion
Complete each sentence or statement.

6. The nominal voltage and rated _____ of the selected battery are used to determine the configuration of the battery bank.

7. For _____ systems, the array must be sized to produce enough electrical energy to meet all the load requirements during the critical design month.

8. _____-mounted PV systems may also contain lights, weather stations, communications equipment, security cameras, or other devices.

9. A(n) _____ tracking mount is an array mounting system that uses electric motors and gear drives.

10. _____ corrosion is an electrochemical process that causes electrical current to flow between two dissimilar metals, eventually corroding one of the materials.

Answers:

MULTIPLE CHOICE
1. ANS: C
2. ANS: B
3. ANS: A
4. ANS: C
5. ANS: B

COMPLETION
6. ANS: capacity
7. ANS: stand-alone
8. ANS: Pole
9. ANS: active
10. ANS: Galvanic