Register Number……

M.E. DEGREE EXAMINATIONS: DECEMBER 2009

First Semester

ENERGY ENGINEERING

EEG502: Solar Energy Systems

Time: Three Hours **Maximum Marks: 100**

Answer All the Questions:-

PART A (10 x 2 = 20 Marks)

1. Define ‘Primary Energy sources’
2. Define ‘Solar constant’.
3. What is pyroheliometer?
4. What is Irradiance?
5. What is meant by a solar collector?
6. List out the methods of improving efficiency of flat plate collectors.
7. What is a fresnel reflector? What is the main feature?
8. What are the most critical properties of a concentrating collector?
9. What are the materials used for latent heat storage?
10. What are the types of solar ponds?

PART B (5 x 16 = 80 Marks)

11. (a) Explain various types of Renewable Energy Sources.

(OR)

(b) Explain Solar Declination, Elevation and Zenith angles.

12. (a) Explain the schematic arrangement of Pyranaometer with neat sketch.

(OR)

(b) Explain the radiation characteristics of Opaque materials.

13. (a) Explain thermal losses and efficiency of flat plate collectors.

(OR)

(b) Explain the construction and working of solar flat plate collector.

14. (a) Explain the working of Compound Parabolic Concentrator with neat sketches. What are the advantages?

(OR)

(b) Describe the method of power generation using Central Receiver Power Station.

15. (a) Explain solar thermal energy storage system.

(OR)

(b) Describe the system components of Solar heating system.

****