NEW SCHEME

EE751

Reg. No. | | | | | | | | | | |

Seventh Semester B.E. Degree Examination, January/February 2006

Electrical & Electronics Engineering

Renewable Energy Sources

Time: 3 hrs.) (Max.Marks : 100

Note: *Answer any FIVE full questions.*

1. (a) State and explain solar constant. **(5 Marks)**

   (b) Explain the following terms as referred to solar radiation
   i) Diffuse solar radiation
   ii) Beam radiation
   iii) Insolation. **(10 Marks)**
   Briefly state how these are affected by Sun's altitude.

   (c) With a suitable diagram explain Angstrom compensation pyrheliometer. **(5 Marks)**

2. (a) With a suitable sketch state the main components of liquid heating flat plate collector. Mention the advantages of glass cover in such an application. **(10 Marks)**

   (b) State the relative advantages of concentrating solar collector over flat plate collector. **(10 Marks)**

3. (a) State the factors which influence optimum capacity of solar energy storage. **(8 Marks)**

   (b) State the advantages of photo voltaic solar energy conversion. **(8 Marks)**

   (c) State the principle involved in solar green house. **(4 Marks)**

4. (a) State and briefly explain the factors that determine the output power from wind energy. **(5 Marks)**

   (b) With a suitable block diagram explain the functions of different components of WECS. **(15 Marks)**

5. (a) Briefly explain the following as applied to biomass conversion
   i) Thermochemical conversion
   ii) Anaerobic digestion
   iii) Fermentation. **(12 Marks)**

   (b) State and briefly explain any four factors which affect biodigestion. **(8 Marks)**

6. (a) With a suitable diagram explain a two stage continuous plant biogas plant. **(10 Marks)**

   (b) With a suitable diagram explain the working of Janatha model fixed dome digester. **(10 Marks)**

7. (a) With a suitable diagram explain open cycle OTEC system for ocean thermal energy power generation. **(12 Marks)**

   (b) Briefly explain advantages of non conventional energy sources. **(8 Marks)**

8. (a) State and explain the three main components of tidal power plant. **(12 Marks)**

   (b) Explain the working of single basin tidal power plant. **(8 Marks)**

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