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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Eighth Semester, B.E. - Electrical and Electronics Engineering

Semester End Examination; June/July - 2015

Renewable Energy Sources

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer any **FIVE** full questions, selecting at least **TWO** full questions from each **part**.*

PART - A

1 a. Explain briefly the various types of conventional and non-conventional energy sources. 10

b. What is meant by R.E.S? Explain in brief these energy sources with specific reference to Indian context. 10

2 a. Explain the following: i) Solar Constant
ii) Solar Azimuth angle. 10

b. Explain the working principles of Angstrom pyrholimeter and Eppley pyranometer with neat sketches. 10

3 a. Enumerate the different types of concentrating type solar energy collectors. 10

b. Explain the different types of solar air collectors with their applications. 10

4 a. Explain the following:
i) Solar cooker ii) Solar Pond
iii) Solar green houses iv) Solar furnace 10

b. What is the principle operation of solar photovoltaic power generation? Explain the main elements of P.V. System. 10

PART - B

5 a. Discuss in brief the different types of wind energy conversion systems. 10

b. Describe the main considerations in selecting site for wind generation. 10

6 a. Explain photosynthesis process. What are the conditions which are necessary for it? 10

b. Explain the constructional detail and working of KVIC digester. 10

7 a. Explain the basic principle of tidal power. 10

b. Explain the various components of tidal power plants. 10

8 a. Describe the working principle and operation of open cycle ocean thermal energy conversion system. 10

b. With a neat sketch the working principle of hybrid cycle of ocean thermal energy conversion systems. 10

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