



Code No. : 5116/M

FACULTY OF ENGINEERING

B.E. 4/4 (EE/Inst.) II Semester (Main) Examination, May/June 2012
RENEWABLE ENERGY SOURCES (Elective – II)

Time: 3 Hours]

[Max. Marks : 75

Note : Answer **all** questions from Part A, Answer **any five** questions from Part B.

PART – A

25

1. Discuss briefly about the limitations of renewable energy sources. 3
2. Write briefly about how the power is harnessed from biomass. 2
3. Define :
 - a) surface Azimuth angle
 - b) Solar Azimuth angle. 2
4. Explain the principle of forced convection. 2
5. Compare wind power with traditional power generation. 3
6. List out the various components present in a wind turbine. 3
7. Explain the concept of photosynthesis with relevant equations. 3
8. Discuss the advantages and disadvantages of floating drum biogas plant. 3
9. Write the principle of operation of OTEC. 2
10. Write a short notes on diffuse solar radiation. 2

PART – B

50

11. a) Briefly discuss about the statistics of conventional energy sources in developing countries. 5
- b) What are the prospects of non-conventional energy sources in India ? 5
12. a) Explain the working of a paraboloidal type of solar collector. 5
- b) Discuss the working principle of a swirling engine. 5



13. Draw and explain in detail about grid connected solar power satellite. 10
14. Derive the equations for power and maximum power available in the wind. 10
15. a) Describe the working of a wind power plant by drawing a neat sketch. 6
b) Plot and explain the curve between power generated as a function of wind speed. 4
16. a) Describe a Binary cycle system for geothermal liquid dominated system. 7
b) What are the main applications of geothermal energy ? 3
17. Explain in detail about the designing of 5 MW OTEC pro-commercial plant. 10