

Code: 9A02706

R09

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2016

RENEWABLE ENERGY SOURCES

(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Compare renewable energy sources with nonrenewable energy sources.
(b) List the instruments that are used for measuring solar radiation. Explain any one in detail.
- 2 (a) With neat diagram explain the functioning of concentrating collector system. Also discuss its advantages & disadvantages.
(b) What are the different types of concentrating collectors? Explain with neat diagram.
- 3 (a) Explain the process of conversion of solar energy into electrical energy by photovoltaic cell. Also draw the characteristics of PV cell.
(b) With neat diagram, explain the functioning of solar water heater.
- 4 (a) With neat block diagram, explain the function of each component of vertical axis windmills.
(b) From the first principle derive the equation Betz's constant.
- 5 (a) Explain fixed dome type biogas plant with neat diagram.
(b) Compare the two stroke and four stroke cycles of a IC engine having a same speed and size.
- 6 (a) What do you mean by geothermal energy? Highlight its potential in India.
(b) What are the different types of well in case of geothermal energy?
- 7 (a) Briefly explain with diagram, single basin and double basin types.
(b) Briefly explain the components: Dam, sluice ways, turbine and alternator.
- 8 (a) Discuss the need of direct energy conversion.
(b) Write a short note on Carnot cycle.
