

B.Tech. SEM -VI Electrical 2014 Course (CBCS) : WINTER - 2018
SUBJECT: ELECTIVE-II: RENEWABLE ENERGY SYSTEMS

Day: Saturday
Date: 17/11/2018

W-2018-2472

Time: 10.00 AM TO 01.00 PM
Max Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Use of non programmable calculator is **ALLOWED**.
 - 4) Assume suitable data, if necessary.
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- Q.1** a) Write short note on: (05)
i) Energy Efficiency ii) Energy Security iii) Energy Economics
b) Discuss the concept of carbon credit. (05)
- OR**
- a) Describe KYOTO protocol in brief. (05)
b) State and explain various environmental issues. (05)
- Q.2** a) Write a note on environmental impacts of wind turbine. (05)
b) Describe working of WECS with components. (05)
- OR**
- a) Enlist the types of generators used in WES. Explain any one. (05)
b) Write a note on "Grid connected wind turbine" (05)
- Q.3** a) Write a note on "Altitude angle of the sun at solar noon". (05)
b) Explain the solar spectrum. (05)
- OR**
- a) Enlist various types of collectors and explain with sketch. (05)
b) Discuss about direct and differed radiation and effect on power generation. (05)
- Q.4** a) What is photo-voltaic cell? Describe in brief with a neat diagram a 'Silicon Photovoltaic cell'. (06)
b) List the applications of photovoltaic systems. (04)
- OR**
- a) Describe a standalone photovoltaic system. (04)
b) What are the advantages and limitations of photovoltaic system and the causes of low efficiency of a solar cell? (06)
- Q.5** a) Discuss the mini and Micro hydro power plants. (05)
b) Define the term photosynthesis. What are the conditions necessary for photosynthesis process? (05)
- OR**
- a) What is Biochemical conversion? Explain Anaerobic digestion and Fermentation. (05)
b) Discuss the Biomass conversion technologies and products. (05)
- Q.6** a) Discuss the methods of hydrogen storage. (05)
b) Discuss the use of various energy storage techniques in renewable energy sources. (05)
- OR**
- a) Write short note on (10)
i) Battery storage
ii) Pumped water energy storage