



**B.E DEGREE EXAMINATIONS: NOV 2015**

(Regulation 2009)

Seventh Semester (Fast Track)

**MECHANICAL ENGINEERING**

**MEC141: Renewable Energy Sources**

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Beam radiation is the sun rays \_\_\_\_\_ on the earth surface.
  - a) directly incident
  - b) Scattered
  - c) diffused
  - d) Reflected
2. Solar energy is
  - a) Primary energy
  - b) Conserved energy
  - c) Secondary energy
  - d) Converted energy
3. Heat is \_\_\_\_\_Energy
  - a) Low grade
  - b) High grade
  - c) None of the above
  - d) Superior grade
4. The Ratio of Energy fed back by the material to the energy received from the environment is called\_\_\_\_\_
  - a) Yield ratio
  - b) Energy ratio
  - c) Material ratio
  - d) Environment ratio
5. The direct conversion of heat energy into electric energy is based on \_\_\_\_\_ effect
  - a) Thomson effect
  - b) Seeback Thermoelectric effect
  - c) Peltier effect
  - d) Ohm effect
6. Steam continuously vented through the fissures is called
  - a) Hot dry rock
  - b) Hot spring
  - c) Fumaroles
  - d) Magma
7. The Sludge is used as a soil conditioner because of its \_\_\_\_\_ content
  - a) Oxygen
  - b) Nitrogen
  - c) Sulphur
  - d) H<sub>2</sub>S



(ii) Illustrate the testing procedure of liquid flat plate collector with neat schematic diagram. (7)

23. a) Explain the working of horizontal axis two blade wind mill with suitable diagram.

**(OR)**

b) Summarize the principle of closed cycle OTEC system.

24. a) (i) Illustrate the production of biogas with neat sketch (7)

(ii) State various routes of biomass energy conversion to other form of energy (7)

**(OR)**

b) (i) Summarize the factors considered for the selection of site for biogas plant. (7)

(ii) Explain any two types of biomass conversion processes. (7)

25. a) Illustrate MHD power generation technology.

**(OR)**

b) Explain phosphoric acid and molten carbonate fuel cell.

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