KUMARAGURU college of technology
character is life

Register Number: ……..

B.E DEGREE EXAMINATIONS:MAY 2014

(Regulation 2009)

Sixth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

EEE115**:** Renewable Energy Sources

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Global warming is mainly caused due to
   a) Emission of heat from engines
   b) Emission of CO_2 due to burning of fossil fuels
   c) Use of nuclear energy
   d) Air pollution
2. What is the per capita electrical energy consumption of india?
   a) 100 kwh/year
   b) 150 kwh/year
   c) 400 kwh/year
   d) 700 kwh/year
3. An MPPT is basically
   a) A dc-dc switching regulator
   b) An ac-dc converter
   c) A dc-ac inverter
   d) An amplifier
4. The payback period of an ordinary passive solar water heater is
   a) 20-60 years
   b) 1 year
   c) 2-6 years
   d) 6-10 years
5. The wind turbine rotor having a low value of solidity
   a) Runs slower
   b) Runs faster
   c) Produces high torque
   d) Has low efficiency
6. The energy payback period of wind generation is
   a) 1 year
   b) 2 years
   c) 3 years
   d) 4 years
7. The percentage of ethanol in blended petrol (gasohol) is
   a) 20%
   b) 30%
   c) 4%
   d) 50%

8. Bio-diesel is

a) Obtained from fermentation of sugars
b) Obtained from pyrolysis process
c) Exudates of plants
d) An upgraded vegetable oil

9. In fuel cell the average voltage per cell is

a) 0.75 v
b) 1.5 v
c) 12 v
d) 30 v

10. Wave energy is basically harnessed in the form of

a) Thermal energy
b) chemical
c) Mechanical energy
d) Electrical energy

PART B (10 x 2 = 20 Marks)

11. How can you label nonrenewable and renewable energy sources?
12. Define energy conservation.
13. Select the various methods to measure solar radiation.
14. What is meant by solar constant?
15. Distinguish between yaw control and pitch control.
16. What is synchronization?
17. What is meant by anaerobic digestion.
18. List out the biomass conversion techniques.
19. Compare see beck and Thomson effect.
20. Classify fuel cells.

PART C (5 x 14 = 70 Marks)

21. a) Briefly explain

(i) Distributed generation (7)

(ii) Restructure of power system (7)

(OR)

b) Discuss the world energy scenario in renewable power generation.

22. a) Explain with neat sketch the features of

(i) Flat plate collector (7)

(ii) Compound parabolic concentrator (7)

(OR)

b) Explain the various types of SPV cells and its fabrications.

23. a) Explain the basic components of Wind Energy Conversion System.

(OR)

b) (i) Compare HAWT and VAWT systems. (7)

(ii) How to appraise the site selection in wind energy? (7)

24. a) Explain various types of biomass gasifiers with neat sketch.

(OR)

b) (i) Summarize the advantages of bio-gas plants. (7)

(ii) Distinguish floating -drum and fixed-dome type biogas plants. (7)

25. a) Discuss about MHD power generation system.

(OR)

b) With a neat sketch, explain the working of ocean tidal energy conversion system.

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