Register Number: ……..

B.E., DEGREE EXAMINATIONS: MAY/JUNE 2013

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. Which is a conventional source of energy
   a) solar b) radioactive substances
   c) Geothermal d) wind
2. Distributed Power systems range in size and capacity from a _____
   a) few kilowatts up to 50 KW b) few kilowatts up to 50 MW
   c) few kilowatts up to 50 GW d) few watts up to 50 W
3. Solar cells, for power generation, have the mains draw-back(s) of
   a) low efficiency b) lack of availability
   c) high cost and maintenance problems d) all of the above
4. A module is a
   a) series-arrangement of solar cells b) parallel arrangement of solar cells
   c) series-parallel arrangement of solar cells d) cascaded arrangement of solar cells
5. Available efficiency of wind turbine _____
   a) 45.5 % b) 35.5%
   c) 59.3% d) 76.6%
6. The rotor used for water pumping
   a) Savonius rotor b) Propeller rotor
   c) Two blade rotor d) none of the above
7. . Biomass resources for energy production are widely available in
   a) forest areas b) Urban refuse
   c) Rural farms d) All of the above

8. pH value for Biogas production

a) 6.8 and 7.8 b) 6 and 8

c) 5 and 6.4 d) 3.2 and 5.2

9. 1 MW OTEC (Ocean Thermal Energy conversion) plant in _____

a) Madurai b) Lakshdeep

c) Delhi d) Bombay

10. Work function of metal may be defined as the minimum amount of energy that must be given to its fastest moving electron at _____ in order to enable it to escape from the metal.

a) Room temperature b) 0°K

c) 40°K d) 10° K

PART B (10 x 2 = 20 Marks)

11. What is deregulation?
12. What is restructuring of power system network?
13. What is solar constant?
14. What are the types of PV cell?
15. Write the Betz limit of wind energy conversion system.
16. What are the forces acting on the wind blades?
17. What are the advantages of biogas plants?
18. What are the materials used for biogas plants?
19. What is magneto hydro dynamic energy conversion?
20. What is Thrmoionic generation?

PART C (5 x 14 = 70 Marks)

21. a) Write short notes on

(i) Distributed generation (7)

(ii) Energy consumption as a measure of prosperity (7)

(OR)

b) Explain in detail the non conventional energy sources.

22. a) What is the principle of solar photo voltaic power generation? What are the advantages and disadvantages of photo voltaic conversion?

(OR)

b) Explain solar energy collectors with neat diagram.

23. a) Explain Site selection consideration for wind mill.

(OR)

b) Explain the wind energy conversion system with neat diagram.

24. a) (i) Explain the factors affecting biogas plant. (7)

(ii) Explain the site selection consideration for biogas plant. (7)

(OR)

b) Explain the different types of biogas plant with neat diagram.

25. a) Write short notes on

(i) Thermo electric generation (7)

(ii) Fuel cells (7)

(OR)

b) Explain the different types of MHD system with neat diagram.

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