

Register Number.....

B.E. DEGREE EXAMINATIONS: APRIL/MAY 2012

Sixth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

EEE115: Renewable Energy Sources

Time: Three Hours

Maximum Marks: 100

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. The type of Generator which is suitable for the wind generation is
a) D.C Generator b) Induction Generator c) Synchronous Generator d) All the above.
2. The wind speed of the wind turbine while running is
a) 7 m/s b) 2m/s c) 6m/s d) 5m/s
3. The cost of generation of conventional energy source is
a) Low b) High c) Medium d) Nominal
4. Solar kilns are used in
a) fruit drying b) corn drying c) fish drying d) all the above
5. The working fluid used in solar pumps
a) Monochloro benzene b) petrol c) diesel d) none of the above
6. The type of rotor which is used for Horizontal axis wind turbine is
a) Single blade type b) Dutch type c) Two blade type d) All the above
7. The spring tides are defined as
a) The tidal range is minimum on full moon and new moon
b) The tidal range is maximum on full moon and new moon
c) The tidal range is maximum on full noon and minimum on new moon
d) None of the above
8. The major component of tidal power plant is
a) prime mover b) Heater c) Sluice gate d) Coolers
9. The type of OTEC plants are
a) open and closed type b) semi closed c) closed type d) none of the above
10. The range of mini hydroplant is
a) upto 5000 kw output b) upto 2000 kw output
c) 7000 kw output d) 4000 kw output

PART B (2 x 10 = 20 Marks)

11. What is meant by Commercial energy?
12. What are the advantages of renewable energy sources?
13. Define solar constant.
14. List the applications of solar PV system
15. List the basic components of Wind energy conversion system.
16. What are the requirements for good wind power site?
17. Why the biogases are mainly utilized?
18. Classify the biogas plants.
19. Write the types of geo thermal resources.
20. What is meant by ocean thermal energy conversion?

PART C (5x14 = 70 Marks)

21. a) (i) Compare the energy consumption pattern in various parts of India. (7)
(ii) Compare conventional and non conventional energy resources. (7)

(OR)

- b) Discuss briefly about various renewable energy sources and also explain about their availability, Economics and efficiency with reference to Indian context.

22. a) Explain with necessary diagram the construction, principle of operation and applications of Solar collector.

(OR)

- b) (i) Give merits and demerits of solar energy. (7)
(ii) State and explain some important applications of solar PV. (7)

23. a) (i) Explain briefly about safety and environmental aspects of wind energy. (7)
(ii) Compare the performance of vertical and horizontal axis wind mills. (7)

(OR)

- b) Describe with a neat sketch the working principle and operation of a wind energy conversion system(WECS) with its main components.

24. a) Describe in detail the construction and working of various types of Biogas plants. State the merits and demerits of them.

(OR)

b) Write short notes on (i) Applications of Bio energy (7)

(ii) How do we get energy from various types of wastes? (7)

25. a) Draw the layout of micro hydro scheme with its component, state advantages and disadvantages

(OR)

b) Explain in detail any one type of geothermal power plant. Compare its efficiency with tidal power plant.
