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Total Number of Pages : 01

B.Tech
PEEL5302

5th Semester Back Examination 2018-19

RENEWABLE ENERGY SYSTEMS

BRANCH : EEE, ELECTRICAL, PLASTIC

Time : 3 Hours

Max Marks : 70

Q.CODE : E602

Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions : (2 x 10)

- What are primary and secondary energy sources?
- What are the green house gases?
- What are the advantages of solar PV system?
- Write down the equation for power density in the wind and power delivered by the wind.
- What are the major ecological arguments in wind energy power system?
- What do understand by solidity of wind turbine?
- What are the limitations of an MHD generating system?
- Differentiate between wind-diesel hybrid system and wind PV hybrid system?
- What do you understand by energy farming?
- What are the main advantages of biomass energy?

Q2 a) Write short notes on energy conservation and energy efficiency. (5)
b) Explain the difference between active and passive solar elating systems. (5)

Q3 a) Define the terms: cavitation of runners, penstock and spill way. (5)
b) What is the basic difference between an active and passive solar heating system? (5)

Q4 a) What is the importance of MPPT in a solar photo voltaic system? (5)
b) Comment on the growth of energy sector in India. (5)

Q5 a) Find the maximum power extracted from the wind. What do you mean by Betz limit from the available power density expression? (5)
b) What is the basic difference between a (sigma) σ -bond and a (pi) π -bond? (5)

Q6 a) What is the main reason to prefer biodiesel to straight vegetable oils (SVO) as fuel for diesel engines? (5)
b) What is biomass? What are the different resources used to extract biomass energy? (5)

Q7 Discuss about the horizontal axis turbine (propeller type) of wind energy. (10)

Q8 Write short answer on any TWO : (5 x 2)

- Stand-Alone Solar PV System
- hybrid energy systems
- Anaerobic Digestion
- Hybrid electric vehicles