Printed Pages : 03 EL-219

(Following Paper ID and Roll No. to be filled in your Answer Books)

PAPER ID : MD14

Roll No. | | | | | | | | | | |

M. TECH. (Sem.II)

THEORY EXAMINATION – 2015-16

RENEWABLE ENERGY SYSTEM

Time : **3** Hours Total Marks : **100**

SECTION-A

1. Attempt All parts : 2×10=20

(a) What do you mean by *Cooking Fuels*? Explain with examples.

(b) What do you mean by Hydrograph & Hydrology?

(c) What is the difference between Bio Gas and Producer Gas?

(d) What are Primary and Secondary Energy Resources?

(e) What is Natural Gas? Give some examples of availability of Natural Gas in India.

(f) What is *gust*? How it is important in any *WECS*?

(g) What factors led to accelerate development of *Wind Power*?

(h) What is *Reservoir*? How it is important in any *Hydro Power Plant*?

(i) What are disadvantages of *Solar Energy*?

(j) What are Commercial and Non-commercial types of Energy Resources?

SECTION-B

2. Attempt Any Five Questions. 10×5=50

(a) What do mean by "Energy Crisis"? What are the methods of compensation to meet energy crisis.

(b) Derive the Expression for Power Developed due to Wind.

(c) Compare *Wind Power Plant* & *Solar Power Plant* on the basis of process.

(d) Classify Solar Cells. Derive an expression for Maximum Power Output and efficiency of a solar cell.

(e) Describe the classification of *Hydraulic Turbine* in different categories. What is the basis of selection of turbine in hydro *Hydro Power Plant*? Explain in detail.

(f) Compare the relative performance of Floating Drum and Fixed-Dome type Bio Gas Plants.

(g) What is Inflation? How is the effect of Inflation on annual cash flow taken care of?

(h) Compare Mini and Micro Hydro Power Plants on the basis of operation, safety, efficiency and utilization

SECTION-C

3. Attempt Any Two Questions 15×2=30

(a) What do you mean by the Nature of Wind? Describe with the help of neat sketch the construction and working of *Wind Energy Conversion System.*

(b) Explain the Basic Principal of operation for Integrating Non-Conventional Energy Recourses to Conventional Sources. What are its limitations? What are the advantages of integration?

(c) What is the origin of Bio Mass Energy? What is the Global Potential? What is the average efficiency of photosynthetic conversion of solar energy into Biomass?

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