End Semester Examination – December, 2017

Program/course: M Tech -Energy System/Renewable Energy Engineering   Semester-1

Subject: Energy Scenario and Energy Forms	**Max. Marks : 100**
Code : MNEG 701	**Duration : 3 Hrs.**
No. of page/s: 03 pages	

- **Assume any data if not available.**

Section – A   5 x 4 = 20marks

Attempt all questions.

1. Analyze the steps for developing energy efficiency projects in Municipalities through performance contracting

2. Analyze the long term scenario of energy security of India

3. Describe the Air Pollution &Water Pollution by Thermal Power Plants.

4. A 100 Mw Geothermal Power Plant is Operated for 11 Months in a year. One Month is for Maintenance Shut Down .The Cos OF Electrical Energy Supplied is Rupees 2.5/-Per KW-hr. Calculate the Total Earning by the Power Plant neglecting Losses.

5. Describe the Salient Features Of the Electricity act-2003

Section B   (5 X 8=40 Marks)

Attempt questions 6, 7, 8, 9 compulsory and any one of Question 10or 11.

6. What is KYOTO Protocol? How Countries are divided in Groups? Describe in Details the KYOTO Mechanism.

7. Explain C.D.M Project Cycle with Diagram. Also Explain Indian C.D.M Projects.

8. Describe Sustainability Development & Loss Of Biodiversity due to Climate Change. What are the Linkage between Biodiversity & Climate Change?

9. (a). Analyze the salient features of electricity conservation act-2001,along with its amendment

   (b). A Pharma Industry had installed a 1500KVA transformer. The initial demand of the plant

was 1160KVA with power factor 0.70.The industry added 410KVAR capacitor bank in motor

load end. This improved the power factor to 0.89.Calculate the Reduced Require KVA.

10. Explain the Energy from Waste & Power Generation from Land Fill Gas With Diagrams.

OR

11. A Turbine Generator Unit Has Output of 150 MW & Efficiency Of 0.80. Calculate Energy

Supplied per Hours By Stream Generator.

Section – C   (2x 20 = 40 marks)
Attempt question no 12 compulsory   & any one from 13 &14

12. (a) Describe Biomethanation Of Biomass (Anaerobic Process), With Diagrams & Production

of Biofuels from Biomass, With Diagrams Of Biodiesel Cycles Etc.   (10 Marks)

 (b) A Stream Power Station has an Install Capacity of 120 MW & a Maximum Demand of
 100 MW. The Coal Consumption is 0.4 Kg/KWh & Cost of the Coal is Rs. 80 per ton. The
 Annual Expenses on Salary Bill of a Stuff & Others Overhead Charges Excluding Cost Of
 Coal are Rs.50×10^5.The Power Station Works At a Load Factor Of 0.5 & the Capital Cost
 Of the Power Station is Rs. 4×10^5. If the Rate of Interest & Depreciation is 10%.
 Determine The Cost Of Generating Per KWh.

(10 Marks)
13. (a). Analyze the electricity tariff principals with T.O.D meters in details   (10 marks)

  (b). Describe The Energy Conservation Tips For Boilers, Electrical Systems & Electricity
    Motors.   (10 marks)
OR

14. (a). What Was the Need Of Integrated Energy Policy 2006,Describe It's All Special Features?

(10 Marks)
  (b). Calculate Annual Requirement of Lignite Fuel for a Thermal Power Plant Rated
    2000 MW under Following Conditions.
    Plant Rating -2000 MW
    Annual Load Factor-0.5
    Plant Efficiency- 0.25
    Utility Factor of Fuel-0.7
    Available Energy Density in Coal=14mJ/Kg.

(10 Marks)

The END