B.E / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2012

ELECTRICAL AND ELECTRONICS ENGINEERING BRANCH

SECOND SEMESTER

ME 191 – POWER PLANT ENGINEERING

(REGULATIONS 2004)

Time: 3 hr Max Mar: 100

Instructions: 1. Use of steam table and Mollier chart permitted.

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1. Why is electricity the most convenient form of energy?
2. What are the conditions to be satisfied by pulverized coal burners?
3. List the essential elements of hydroelectric power plant.
4. What do you understand by cavitation?
5. What are the functions of a reflector?
6. What are fission fragments and fission products?
7. What are the applications of diesel electric power plants?
8. What methods are adopted for improving thermal efficiency?
9. List the advantages of power generation from non-conventional sources.
10. List the various types solar collectors used.

PART – B (5 x 16 = 80 Marks)

11 a Explain the following with neat sketch (i) Circulating Fluidized bed combustion systems and (ii) Pressurized Fluidized Bed Combustion (16)

12 a. Draw the layout of the hydroelectric power plant and explain in detail about essential elements of hydroelectric power plant (16)

(Or)

b. (i) Explain with neat sketch pumped storage power plant. What are its advantages? (8)

(ii) State the functions of a dam. How are dams classified? Briefly discuss few important types of dams. (8)

13 a. Discuss in detail about Pressurized water reactor (PWR) and Boiling Water reactor (BWR). (16)

(Or)

b. Explain in detail about nuclear waste disposal and merits and demerits of nuclear power plant. (16)

14 a. Discuss the effect of reheating, intercooling, regenerations and their combinations in a gas turbine power plant. (16)

(Or)

b. Draw the layout of diesel engine power plant and explain the essential component of the power plant. Also enlist the advantages and disadvantages of diesel engine power plant. (16)

15 a. Elucidate the following (i) OTEC (ii) Wind power plants and (iii) Tidal power plants. (16)

(Or)

b. Briefly explain the following (i) MHD power generation (ii) Thermoelectric power generation and (iii) Thermionic power generation. (16)