

Code: EE3T3

**II B.Tech - I Semester – Regular/Supplementary Examinations
November 2019**

**THERMAL AND HYDRO PRIME MOVERS
(ELECTRICAL & ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) Explain the term compounding in turbines.
- b) Differentiate impulse and reaction turbines with an example.
- c) Define effectiveness of regeneration.
- d) Name the major components of a gas turbine plant.
- e) Distinguish between Diesel Engines Vs Heavy Oil Engines.
- f) Sketch the general layout of a diesel power plant.
- g) What are the advantages of supercharging?
- h) Give the turbine classification based on head.
- i) What are basic components of Kaplan Turbine?
- j) Differentiate Centrifugal vs Reciprocating pumps.
- k) What is priming? Why is it necessary?

PART – B

Answer any **THREE** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) Sketch and describe the working of Lamont boiler. 8 M

b) What are the elements of jet condenser? Explain the working of jet condenser with a neat sketch. 8 M

3. a) i) List the applications of Gas turbines. 3 M

ii) Explain working principle of open cycle gas turbine plant. 5 M

b) Give the advantages and limitations of gas turbine power plants. 8 M

4. a) Discuss the advantages and disadvantages of a diesel engine. 8 M

b) Write note on exhaust system of diesel power plant. 8 M

5. a) Explain Pelton wheel with a neat sketch. 8 M

b) Explain the working principle of governor with a neat sketch. 8 M

6. a) Explain the working principle of a single stage centrifugal pump with a neat sketch. 8 M

b) How the reciprocating pumps are classified? 8 M