24173

B.Tech. (ME) 4th Semester F-Scheme

Examination, May-2019

STEAM AND POWER GENERATION

Paper-ME-210-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : ***Question No. 1 is compulsory.*** *Attempt* ***one*** *question from each section. All questions carry equal marks.*

1. Explain the following terms : 5×4=20

(a) Steam and power generation

(b) Mollier's diagram

(c) Artificial and mechanical draught

(d) Nozzles

(e) Degree of reaction

Section-A

2. Derive the efficiency of Rankine cycle and modified Rankine cycle. 20

3. What are boilers ? Classify them with neat and clean diagram. 20

Section-B

4. Dry saturated steam is passed at 7 bar through a convergent divergent nozzle. The throat cross-sectional area is 4.5 cm^2. Find the mass of steam passing through the nozzle per minute. 20

5. What is steam engine ? Explain parts of steam engine alongwith their function. 20

Section-C

6. Find out the condition of maximum efficiency of impulse turbine. 20

7. Explain back pressure and pass out turbines in detail. Also discuss their application, advantages and disadvantages. 20

Section-D

8. What are steam condensers ? Discuss the classification of steam condensers with neat and clean diagram. 20

9. What are fuels ? What is calorific value of fuels ? Explain types of fuels. 20