*Roll No.* .....

# 24173

## B. Tech. (4th Semester) (ME) (Re-appear) Examination – October, 2020

### STEAM & POWER GENERATION

**Paper : ME-210-F**

*Time : 1.45 Hours ]* *[ Maximum Marks : 100*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

***Note :*** Attempt any ***three*** questions. All questions carry equal marks.

**1.** Define and mention :

(a) Mechanical Draught

(b) Impulse turbine

(c) Artificial Draught

(d) Calorific values of fuels

(e) Actual indicator diagram

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**1.** Define and mention :

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(c) Artificial Draught

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(e) Actual indicator diagram

(f) Mean effective pressure

(g) Fire tube boiler

(h) Condenser efficiency

(i) Source of air leakage in condensers

(j) Air pumps

**2.** Explain Mollier's diagram and Modified Rankine Cycle with p-v , h-s and T -s diagrams.

**3.** (a) Discuss the working of a Babcock Wilcox boiler with the help of a neat sketch. Discuss the type of draught employed in this boiler.

(b) Write a short note on boilers, Mountings and accessories.

**4.** Derive an expression of Steady state energy equation, continuity equation.

**5.** Explain Working of steam engine and their classifications.

**6.** Explain the working principle of impulse steam turbine in details. Also describe governing of steam turbines.



**7.** (a) Discuss binary vapour cycle working with the help of schematics and T -S diagrams.

(b) Describe the Regenerative feed heating cycle, and pass out turbines in details.

**8.** (a) The absolute pressure in condenser is 15.87 KPa when the barometer reads 2 bar. The temperature is 60°C. Determine the partial pressure of air present in the condenser per kg of steam.

(b) Differentiate between the surface and jet type of condenser.

**9.** (a) Enumerate various types of fuels with their fields of applications.

(b) Discuss the methods of determining the calorific value of solid and liquid fuels.

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