1E3107

Roll No. _____ Total No. of Pages: 2

1E3107

B. Tech. I - Sem. (Main / Back) Exam., - 2023

1FY3 – 07 Basic Mechanical Engineering

Time: 3 Hours **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

PART – A

[10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1 Describe Law of Thermodynamics?

Q.2 Describe with figure different type of belt drive.

Q.3 Define the coefficient of performance of Refrigerator.

Q.4 What is the pattern in casting process?

Q.5 What is industrial engineering & its scope?

Q.6 Differentiate between water tube and fire tube boiler?

Q.7 Write a short note on different type of power plants.

Q.8 What is the IP & BP in the Internal Combustion Engine?

Q.9 Describe modern tools used in Mechanical Engineering.

Q.10 Differentiate between impulse and reaction turbine?

PART – B

[5×4=20]

(Analytical/Problem solving questions)

Attempt any five questions

Q.1 Explain any one type of water tube boiler with neat sketch.

Q.2 Explain differentiate between 2 stroke & 4 stroke engine.

Q.3 How Cavitation can be eliminated by Pump?

Q.4 Describe with figure different types of belt drive?

Q.5 What is air conditioning? Draw and describe different component used in it.

Q.6 Explain the various stages of Heat treatment process?

Q.7 Write short notes on –

(i) Forging

(ii) Drawing

PART – C

[3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 What is meant by refrigeration system? Describe vapor compression refrigeration system?

Q.2 What is gear transmission? Describe different types of gear.

Q.3 Describe rolling process with neat sketches.

Q.4 With a suitable sketch explain the working of centrifugal pump.

Q.5 Describe hardening and tempering of steel.
