

TED (15) – 2021

(REVISION — 2015)

Reg. No.

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

BASIC MECHANICAL ENGINEERING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List any four physical properties of materials.
2. List any four boiler mountings.
3. Define I C engines.
4. Define geothermal energy.
5. Name the chief alloying elements of 18 – 4 – 1 H S S. (5 × 2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Name any four mechanical properties of materials. Explain any two of them.
2. Explain liquid penetrant test.
3. State wet steam, dry steam and super heated steam.
4. Compare water tube boiler and fire tube boiler.
5. Mention the advantages of IC engines over EC engines.
6. Draw the sectional view of an IC engine and name its parts.
7. Mention the advantages and disadvantages of solar power plant. (5 × 6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Draw and explain the working of Blast Furnace. 9
 (b) Describe Izod impact test. 6

OR

- IV (a) Explain with figure, how to conduct the tensile test on ductile materials. 9
 (b) State the different types of cast iron. Explain any four of them. 6

UNIT — II

- V (a) Explain the working of La-Mount boiler. 9
 (b) With neat sketch explain the working of water level indicator. 6

OR

- VI (a) How steam engines are classified ? Explain. 9
 (b) Describe the working of air pre heater. 6

UNIT — III

- VII (a) Explain the working of two stroke petrol engine. 9
 (b) Compare SI engines and CI engines. 6

OR

- VIII (a) Explain the working of four stroke diesel engine. 9
 (b) Illustrate the classifications of IC engines. 6

UNIT — IV

- IX (a) Explain with figure the working of hydroelectric power plant. 9
 (b) Write the advantages and disadvantages of Nuclear power plant. 6

OR

- X (a) Describe the working of steam power plant. 9
 (b) Write the advantages and disadvantages of Tidal power plant. 6