

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL -2022.

BASIC MECHANICAL ENGINEERING

(Maximum Marks : 100)

[Time : 3 hours]

PART-A

(Maximum marks: 10)

Marks

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

1. Define the mechanical property Toughness.
2. Write any four type of non-destructive testing methods.
3. Define dryness fraction.
4. Define scavenging process in two stroke engines.
5. List any four non-conventional energy power plants. (5x2=10)

PART - B

(Maximum Marks : 30)

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

1. Explain the mechanical property Creep with necessary diagram.
2. Define steam and its properties.
3. Compare fire tube boiler and water tube boiler.
4. Classify IC Engines.
5. Explain the working of two stroke petrol engine with a diagram.
6. List the classification of power plants.
7. Explain the following with sketches.

(i)Flat plate solar collector (ii)Parabolic solar collector. (5x6 =30)

PART - C

(Maximum marks : 60)

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

UNIT I

- III** (a) Explain X-ray radiography test with a neat sketch. (7)
- (b) Explain the working of a Blast furnace with a neat sketch. (8)

OR

IV (a) Illustrate and explain the stress-strain diagram of ductile material. (7)

(b) Explain the working of a Cupola furnace with a neat sketch. (8)

UNIT- II

V (a) Classify the boilers on various criteria. (7)

(b) Explain the working of a La-Mont boiler with a neat sketch. (8)

OR

VI (a) Explain the working of a Cochran boiler with a neat sketch. (7)

(b) Explain the function of a steam trap valve with a neat sketch. (8)

UNIT- III

VII (a) Explain the functions of 3 basic components of IC engine with a sketch. (7)

(b) With the help of a neat sketch, explain the working of 4-stroke diesel engine. (8)

OR

VIII (a) Illustrate the working of a 2 stroke cycle diesel engine. (7)

(b) Compare SI engine and CI engine. (8)

UNIT – IV

IX (a) Explain the classification of power plants. (7)

(b) Illustrate the working of hydroelectric power plant. (8)

OR

X (a) Explain the working of a nuclear power plant with a neat diagram. (7)

(b) Describe the working of geothermal power plant with a neat diagram. (8)
