

TED (15/19) -2021  
(Revision- 2015/19)

**A21-03506**

Reg.No.....  
Signature. ....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE – APRIL -2021.

**BASIC MECHANICAL ENGINEERING**

(Maximum Marks : 75)

[Time : 2.15 hours]

**PART–A**

Marks

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

1. Define specific heat of a substance.
2. Give the composition of phosphor bronze.
3. What do you mean by critical point of a pure substance?
4. Define compression ratio of an I.C.engine.
5. Give any four disadvantages of wind energy.

(3x2=6)

**PART - B**

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

1. Explain fatigue testing.
2. Discuss the classification of engineering materials. Briefly explain each group of materials.
3. Compare water tube boilers with fire tube boilers.
4. Describe the construction and working of superheater with the help of a diagram.
5. Compare S.I and C.I. engines.
6. Briefly discuss the classification of I.C. Engines.
7. Discuss the advantages and disadvantages of nuclear power plant.

[4x6 =24]

**PART - C**

(Answer **any of the three units** from the following. Each full question carries 15 marks)

**UNIT I**

- III** (a) Draw and explain stress-strain diagram of a ductile material. (8)  
(b) Discuss various types of cast iron along with the composition. (7)

**OR**

- IV** (a) Explain the manufacturing of cast iron. (8)  
(b) Briefly discuss various types of steels along with the composition. (7)

**UNIT- II**

- V** (a) Explain the construction and working of Cochran boiler with the help of a sketch. (8)  
(b) Briefly discuss the working of economiser with the help of a diagram. (7)

**OR**

- VI** (a) Discuss the construction and working of single cylinder double acting steam engine. (8)  
(b) Explain the construction and working of steam stop valve with the help of a diagram. (7)

**UNIT- III**

- VII** (a) Draw and explain the working of a four stroke diesel engine. (8)  
(b) Discuss the functions of various parts of an I.C. engine with the help of a diagram. (7)

**OR**

- VIII** (a) Illustrate the working of a two stroke petrol engine with the help of diagram. (8)  
(b) Compare two stroke and four stroke I.C. engines. (7)

**UNIT – IV**

- IX** (a) Discuss the working of hydro-electric power plant with the help of diagrams. (8)  
(b) Explain the working of solar thermal power plant with the help of diagrams. (7)

**OR**

- X** (a) Describe the working of diesel power plant. (8)  
(b) Describe the working of tidal power plant with the help of diagrams. (7)