

TED (15) 2021

Reg No:.....

(REVISION 2015)

Signature.....

SECOND SEMESTER DIPLOMA EXAMINATION MECHANICAL ENGINEERING

BASIC MECHANICAL ENGINEERING

MODEL QUESTION PAPER

Maximum marks :100

Time : 3 Hrs

Part A

(Maximum marks : 10)

I. Answer the following questions in one or two sentences.

1. define the term thermal diffusivity

2.What is non destructive testing of materials?

3. Write the function of fusible plug fitted on a boiler?

4. Define Internal combustion engine.

5. What is non conventional energy power plant? (5 X 2 =10 marks)

Part B

(Maximum marks: 30)

II. Answer for any five of the following questions. (Each question carries 6 marks)

1.Explain briefly ,

i) Mechanical properties of materials. ii) Electrical properties of materials.

2. Name any two types of cast irons, with their compositions and uses.

3. Write the functions of water level indicator fitted on a boiler.

4.Discuss in brief the function of air pre heater attached to a boiler.

5. Explain briefly the sequence of operations in a four stroke petrol engine.

6.Write the basic differences between Four stroke engine and two stroke engine.

7.write short notes on conventional power plant and non conventional power plant..

(5 X 6 = 30)

Part C

Maximum marks :60)

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

III. a) Illustrate the working of cupola furnace. (9)

b) With the help of line diagram discuss stress strain diagram for mild steel. (6)

OR

IV a) Discuss following chemical properties of materials. (3X3=9)

i) Corrosion resistance ii) Acidity iii)Alkalinity.

b) Illustrate the liquid penetrant test. (6)

V. a) With line diagram, briefly explain the working of a Cochran boiler. (9)

b) Write the important classifications of steam boilers. (6)

OR

VI a) Sketch and explain the function of air preheater used with boilers. (8)

b) Explain how economizer is useful in boiler. (7)

VII a) Illustrate the working of a four stroke diesel engine. (9)

b) Write the special features of two stroke petrol engines. (6)

OR

**VIII a) Write any six comparisons between spark ignition engines
and compression ignition engines. (9)**

b) With line diagram show various parts an Internal combustion engine. (6)

IX a) With line diagram explain the working of a Diesel Power plant. (9)

b) What are the advantages and limitations of wind power plants. (6)

OR

X a) With line sketch explain working of a tidal power plant (9)

b) Write the advantages and limitations of nuclear power plants? (6)

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