

4248

**BOARD DIPLOMA EXAMINATION,(C-14)
MARCH /APRIL-2019
DEEE – THIRD SEMESTER EXAMINATION**

GENERAL MECHANICAL ENGINEERING**Time: 3 Hours****Max. Marks:80**

PART-A**10X3=30M**

- Instructions :** 1) Answer **all** questions and each question carries **three** marks.
2) Answer should be brief and straight to the point and shall not exceed five simple sentences.
- 1) State the Hooke's law and write its equation.
 - 2) A rod of 30 mm diameter and 1.2 m long is subjected to an axial pull of 84.8 KN. Young's Modulus of the rod material is 200KN/mm². Determine the elongation of the rod.
 - 3) State the meaning of shaft ? How do you classify shaft.
 - 4) Write the Torsion Equation and Mention the terms involved in it.
 - 5) List out the various components of an I.C.Engines.
 - 6) Write any three differences between Petrol Engine and Diesel Engine.
 - 7) State the working principle of steam turbine?
 - 8) Mention the various Boiler Mountings and Accessories.
 - 9) List out different types of pumps.
 - 10) Mention different types of lubricants.

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PART-B

5X10=50

Instructions: 1) Answer any **five** questions. Each question carries **ten** marks.

2) Answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

- 11) Draw the Stress-Strain diagram for Mild steel and explain the terms involved in it. 10M
- 12) A bar of length 3 m has a diameter of 50 mm over half of its length and a diameter of 25 mm over the other half. Young's Modulus is 2.06×10^5 N/mm² and the bar is subjected to a pull of 50 KN. Find the stress in each section and the total elongation of the bar. 10M
- 13) Find the diameter of solid shaft required to transmit 750 KW power at 250 RPM. The maximum allowable shear stress is not exceeded 50 N/mm² and twist is not exceeded 2° in a length of 2m. Take Modulus of rigidity $G = 0.8 \times 10^5$ N/mm². 10M
- 14) Explain the working of Four stroke petrol engine with the help of neat sketch. 10M
- 15) Explain the working of simple carburetor with the help of neat sketch. 10M
- 16) Describe the Lamont Boiler with the help of neat sketch. 10M
- 17) a) How do you classify the steam turbines.
b) Distinguish between Impulse Turbine and Reaction Turbine. [4+6]
- 18) Explain working of Centrifugal pump with the help of neat sketch. 10M

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