



C16-EE-304

6240

BOARD DIPLOMA EXAMINATION, (C-16)
OCT/NOV—2017
DEE—THIRD SEMESTER EXAMINATION
GENERAL MECHANICAL ENGINEERING

Time : 3 hours]

[Total Marks : 80

PART—A

10×3=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define linear strain and lateral strain and state the relation between them.
2. Draw the stress-strain diagram for mild steel and locate the silent points on it.
3. State the Torsion equation and explain terms involved.
4. Define Torsional rigidity and torsional stiffness.
5. Name any six important parts of an IC engine.
6. Distinguish between diesel engine and petrol engine.
7. List out important boiler mountings.
8. Write working principle of steam turbine.

- * 9. What is priming?
10. How are hydraulic turbines classified?

PART—B

5×10=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. A bar of 25 mm diameter is subjected to a pull of 50 kN. The measured extension over a gauge length of 200 mm is 0.1 mm and the change in diameter is 0.0035 mm. Find the values of three elastic moduli.
12. Select a suitable diameter of a solid shaft to transmit 100 kW of power at 2400 r.p.m., if the allowable stress is not to exceed 70 N/mm² and twist not to exceed 1° in a length of 3 m. Take $G = 0.8 \times 10^5 \text{ N/mm}^2$.
13. Explain the working of four-stroke diesel engine with a neat sketch.
14. Explain the working of zenith carburettor with neat diagram.
15. Describe the working of La-Mont boiler with a neat diagram.
16. Explain the construction and working of Parson's reaction turbine.
17. Explain the working of single-stage centrifugal pump with a neat sketch.
18. Explain the working of Kaplan turbine with a neat sketch.
