C23-EE–405

23439

BOARD DIPLOMA EXAMINATION, (C-23)

OCTOBER/NOVEMBER—2025

DEEE – FOURTH SEMESTER EXAMINATION

GENERAL MECHANICAL ENGINEERING

Time : 3 hours]   [*Total Marks* : 80

PART—A   3×10=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 stress and strain.

2. State the factors to be considered in selecting factor of safety.

3. State the function of shaft.

4. Write torsion equation and note down the term involved in it.

5. Write the classification of IC engine.

6. List out any six components of IC engine.

7. List out important boiler mountings.

8. How are hydraulic turbines classified?

9. Write down the difference between reciprocating pump and centrifugal pump.

10. List out main components of centrifugal pump.

PART—B

10×5=50

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

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

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

11. Draw the stress-strain diagram for a typical ductile material and locate the salient points on it.

12. Find the diameter of solid circular shaft required to transmit 750 kW at 250 rpm. It specified that the maximum shear stress must not exceed 50 N/mm^2 and the angle of twist must not exceed 2 degree in a length of 2 m. Take $G = 0.8 \times 10^5$ N/mm^2.

13. Describe the working of 4-stroke diesel engine with a neat sketch.

14. Explain constructional features of an IC engine with a neat sketch.

15. Explain the working of La Mont high pressure boiler with a neat sketch.

16. Explain the construction and working of Parson's reaction turbine.

17. Explain working of single acting reciprocating pump with a neat sketch.

18. Describe the working of submergible pump with a neat sketch.

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