6240

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DEEE– THIRD SEMESTER

GENERAL MECHANICAL ENGINEERING

Time:3 hours   Max. Marks:80

PART – A   **10X3= 30M**

Instructions: 1. *Answer **all** questions.*
2. *Each question carries five marks.*
3. *Answer should be brief and straight to the point and shall not exceed five simple sentences.*

1.   Define   a) stress   b) strain

2.   Define the terms linear strain and lateral strain.

3.   What is shaft? State the functions of shaft.

4.   Define torsion. Which stress is induced in a shaft when it is subjected to twisting moment?

5.   Write any six parameters on which IC engines are classified.

6.   List out any six parts of petrol engine.

7.   Write any three classifications of steam boilers.

8.   Write any three classifications of steam turbines.

9.   Write any three differences between impulse and reaction turbine.

10. Write any three differences between centrifugal and reciprocating pump.

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PART – B   **5 X 10 = 50**

Instructions: 1. Answer any **Five** questions
                         2. Each question carries **TEN** Marks.
                         3. Answer should be comprehensive and Criteria for Valuation
                             is the content but not the length of the answer.

11. A steel bar 350mm long is 20mm in diameter for 200mm of length and
     15mm diameter for the remaining length. If a tensile load of 20kN is applied
     on the bar, calculate the stresses in each section and the total elongation of
     the bar. Take E=2 X 10^5 N/mm^2.

12. A solid shaft of 120mm diameter transmits 80kW power at 160rpm. Taking
     modulus of rigidity as 0.85 x 10^5 N/mm^2. Determine
     a) Torque on shaft
     b) Maximum shear stress induced
     c) Angle of twist in a length of 800mm
     d) Shear stress induced at a radius of 36mm.

13. Explain with a neat sketch working of 4-stroke CI engine.

14. Explain the working of fuel injection pump with the help of neat sketch.

15. Describe the working of La Mont boiler with neat sketch.

16. Explain working of De-Laval impulse turbine with neat sketch.

17. Explain construction and working of pelton wheel with a neat sketch.

18. Explain the working of centrifugal pump with neat sketch.