

\*



C09-EE/CHST-406

**3478**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**MARCH/APRIL—2021**

**DEEE - FOURTH SEMESTER EXAMINATION**

**GENERAL MECHANICAL ENGINEERING**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

4×5=20

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **four** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define (a) stress and (b) strain.
2. Define (a) Elastic limit and (b) Proportionality limit.
3. Classify shafts.
4. Specify the standard sizes of shafts.
5. What is (a) TDC and (b) BDC related to an IC engine.
6. State the function of inlet valve and exhaust valve.
7. Classify steam boilers.
8. Compare impulse and reaction turbines.
9. What are the advantages of centrifugal pump?
10. Explain the function of bearings.

\*

## PART—B

15×4=60

- Instructions :** (1) Answer *any four* questions.  
(2) Each question carries **fifteen** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. A bar of 18 mm diameter is subjected to a pull of 25 kN. The measured extension over gauge length of 80 mm is 0.12 mm and the change in diameter is 0.006 mm. Find Poisson's ratio and the modulus of elasticity.
12. Draw the stress - strain diagram for mild steel (ductile material) and represent salient points on it.
13. A shaft of 30 mm diameter is rotating at 550 r.p.m. Find the power transmitted by the shaft if the permissible shear stress is 70 N/mm<sup>2</sup>.
14. Explain with the help of line sketches the working cycle a 4-stroke CI engine.
15. Explain the working cycle of a 2 stroke SI engine with neat sketches.
16. Describe the working of a La Mont boiler with a neat sketch.
17. Explain the working of an impulse turbine with a neat sketch.
18. Explain the working of centrifugal pump with a neat sketch.

★ ★ ★

\*