



3478

C09 - CHST/EE --406

3478

**BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2018**

DEEE - FOURTH SEMESTER EXAMINATION

GENERAL MECHANICAL ENGINEERING

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

1. Define the terms :
 - (a) Stress
 - (b) Strain
2. Draw stress-strain curve for an M.S. specimen indicating important Points on it.
3. State the functions of shafts.
4. A solid steel shaft 120mm diameter transmits 80kW at 160 r.p.m. Calculate torque transmitted by the shaft.
5. State the function of carburetor and fuel pump in IC engines.
6. Draw a neat sketch of Air preheater used in steam boilers.
7. Write the classification of gas turbines.
8. Explain the principle of working of steam turbine.
9. Write any three applications of lubricants.
10. Write any three advantages of antifriction bearings.

PART-B

10×5=50

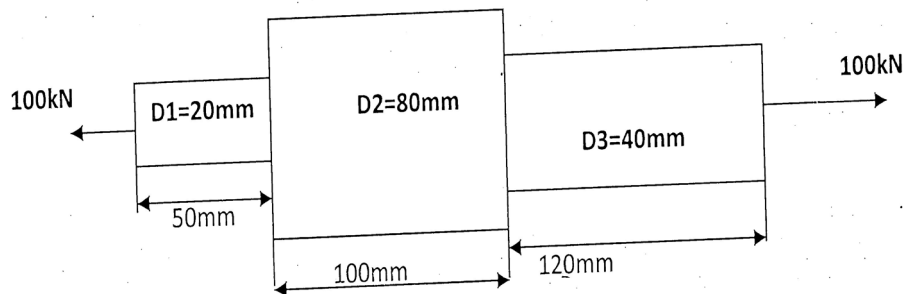
- Instructions :**
- (1) Answer **any five** questions.
 - (2) Each questions carries **ten** marks.
 - (3) Answers should be comprehensive.

11. A mild steel rod 2m long and 20mm diameter is pulled by an axial force of 50kN. Determine :

- (a) Change in length of the rod
- (b) Change in diameter of the rod
- (c) Modulus of rigidity

Take $E = 2 \times 10^5 \text{ N/mm}^2$, Poisson's ratio = 0.32

12. Find the total elongation , maximum stress and minimum stress for the given bar. Take $E = 2 \times 10^5 \text{ N/mm}^2$



13. Find the diameter of the shaft required to transmit 160kW at 250 rpm. If the maximum torque is not to exceed the mean torque is not to exceed the mean torque by 35% with a maximum permissible shear stress of 50 N/mm^2

14. Explain four stroke Petrol engine with a neat sketch.

15. Explain pelton wheel with a neat sketch.

16. (a) Write the classification of boilers.

(b) Write any five differences between fire tube and water tube boiler.

17. (a) Draw a neat sketch of Delaval turbine.

(b) Write any five differences between impulse and reaction turbine.

18. Explain centrifugal pump with a neat sketch.

* * *