



C14-EE-306

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**4247**

**BOARD DIPLOMA EXAMINATION, (C-14)  
OCTOBER/NOVEMBER-2018  
DEEE-THIRD SEMESTER EXAMINATION**

GENERAL MECHANICAL ENGINEERING

Time : 3 Hours ]

[ Total Marks: 80

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**PART-A**

3X10=30

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

1. Write the Relation between three elastic constants.
2. Define Hooke's law and write its formula.
3. Write the torsion equation and terms involved points on it.
- \* 4. Define Torsion and Torsional Rigidity.
5. State the function of fuel pump in a diesel engine.
6. Write any three differences between petrol engine and a diesel engine.
7. What is the function of stop valve in a steam boiler?
8. Write any three differences between fire tube boiler and water tube boiler.
9. Draw a line sketch of journal bearing.
10. Mention important properties of good lubricant.

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## PART-B

10X5=50

*Instructions* \* :

1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. Explain the stress-strain diagram with salient features for ductile materials under tensile test.
12. A tube having external diameter 200mm and internal diameter 150mm is subjected to a load of 4 MN. Find stress induced in the material. Find also strain and extension if it is of 2 m in length and having a elastic constant of  $2 \times 10^5$  kN/mm<sup>2</sup>.
13. Find the power transmitted by shaft of 60mm diameter and running with 160rpm. The maximum shear stress in the shaft is not exceed 60 N/mm<sup>2</sup>.
14. Draw a neat diagram of an IC engine and label its parts. What is the function of crank shaft in an IC engine.
15. Explain the working of 4-stroke diesel engine with help of a neat sketch.
16. What is a high pressure boiler? Draw a neat sketch of Benson boiler and label its parts and explain briefly.
17. Explain the working of a reaction steam turbine with a sketch.
- \* 18. Explain the constructional details of a centrifugal pump, with a legible sketch.

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