



**C20-CHPP-CHPC-CHOT-405**

**7474**

**BOARD DIPLOMA EXAMINATION, (C-20)**

**OCTOBER/NOVEMBER—2023**

**DCHPP – FOURTH SEMESTER EXAMINATION**

**BASIC MECHANICAL ENGINEERING**

*Time : 3 Hours ]*

*[ Total Marks : 80*

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**PART—A**

**3×10=30**

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.

1. State the function of universal surface gauge.
2. Compare measuring and checking instruments.
3. State the uses of fuel injection pump and fuel injector in diesel engines.
4. Define supercharging in IC engines. Summarize the effects of it on engine performance.
5. List various boiler accessories.
6. Write down the uses of fusible plug and blow off cock in boilers.
7. Enumerate the uses of compressed air.
8. Denote the effects of intercooler in multistage compression.
9. Write down the purpose of steam nozzle and its application.
10. Give the classification of steam turbines.

**PART—B**

8×5=40

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **eight** marks.

- 11.** Explain the working principle of Vernier bevel protractor with a neat diagram.

**(OR)**

Describe the use of sine bar with neat diagram.

- 12.** Give detailed classification of IC engines with examples.

**(OR)**

Describe the working principle of 2-stroke petrol engine with line diagram.

- 13.** Explain the working principle of simple vertical boiler with neat diagram.

**(OR)**

Draw a neat sketch of Bourdon pressure gauge and describe the use of it.

- 14.** Explain the working principle of centrifugal air compressor with line diagram.

**(OR)**

Compare axial flow and centrifugal type rotary air compressors in detail.

- 15.** Explain the construction and working of impulse turbine with line diagram.

**(OR)**

Describe the construction and working of reaction turbine with line diagram.

**PART—C**

10×1=10

- Instructions :** (1) Answer the following question.  
(2) The question carries **ten** marks.

- 16.** Critically analyze the advantages, disadvantages of friction and methods of reducing friction.

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