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C14-M-404

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2021

DME - FOURTH SEMESTER EXAMINATION

HEAT POWER ENGINEERING - I

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. Draw P-V and T-S diagrams for Otto cycle and mention various processes on it.
2. Write the formula for Air standard efficiency of Carnot cycle and explain each term in it.
3. Classify the IC Engines.
4. Differentiate between 2-stroke and 4-stroke cycle engines.
5. List different methods of Lubricating systems of IC engines.
6. List different methods of governing in IC engines.
7. List different types of air compressors.
8. Differentiate between Reciprocating and Rotary compressors.

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9. List various fuels used in Jet propulsions.
10. Classify the gas turbines.

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. Explain the working of Carnot cycle with P-V and T-S diagrams and write the expression for air standard efficiency.
12. Explain the working of 4- stroke cycle petrol engine with a line diagram.
13. Explain the working of air cooling system in I.C Engine with a line diagram.
14. Explain the working of simple carburettor in petrol engine with a line diagram.
15. Explain the working of Centrifugal air compressor with a neat sketch.
16. Write short notes on the following :
 - (a) Diesel cycle
 - (b) Reciprocating air compressor
17. Explain the working of open cycle gas turbine with a line diagram.
18. Explain the following terms :
 - (a) Brake power
 - (b) Indicated power
 - (c) Mechanical efficiency
 - (d) Thermal efficiency

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