April 2023

<u>*Time – Three hours*</u>
(Maximum Marks: 100)

N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.

2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.

PART – A

1. List any six thermodynamic properties of the system.

2. State Zeroth law of thermodynamics.

3. Define air standard efficiency.

4. Define LMTD.

5. State any three comparisons of petrol and diesel engine.

6. List the types of ignition systems.

7. Define Excess air.

8. Define Indicated power and Brake power.

9. Define refrigerator and heat pump.

10. List out the applications of air conditioning.

[Turn over.....

PART – B

11. (a) Explain the types of thermodynamic system and thermodynamic equilibrium with examples.

    (Or)

    (b) Derive an expression for the work done during polytropic process.

12. (a) Derive an expression for air standard efficiency of Otto cycle.

    (Or)

    (b) Explain the types of heat exchangers with neat sketch.

13. (a) Explain the working of four stroke petrol engine with neat sketches.

    (Or)

    (b) Explain full pressure lubrication system with neat sketch.

14. (a) Explain Morse test procedure.

    (Or)

    (b) Explain the procedure for analysis of exhaust gases using Orsat apparatus.

15. (a) Describe the refrigeration system working on Bell Coleman cycle.

    (Or)

    (b) Explain the working principle of room air conditioning.