PART-A

1. Define an air-standard power cycle and explain its significance in thermodynamics.
2. Compare and contrast the different types of air-standard power cycles
3. Derive the thermal efficiency of the Brayton cycle.
4. Derive the thermal efficiency of the Diesel cycle and explain the impact of the cut-off ratio on efficiency.
5. Describe the Carnot vapor cycle and its significance in the context of thermodynamic cycles.
6. Derive the thermal efficiency of the Carnot vapor cycle. Discuss the factors that influence the efficiency.
7. Discuss the limitations of the Carnot cycle in real-world applications. How does it compare to practical vapor cycles like the Rankine cycle?
8. Define the Rankine cycle and explain its components
9. Derive the thermal efficiency of the Rankine cycle and discuss the role of the steam quality and pressure in the efficiency.
10. Discuss the impact of superheating and subcooling on the efficiency of the Rankine cycle.