SCHOOL OF DIPLOMA ENGINEERING, SOLDHA
QUESTIONS FOR REVISION
DIPLOMA ME 3RD SEM
SUBJECT-THERMODYNAMICS

VERY SHORT QUESTIONS (2 MARKS)

1. Define open system and isolated system.
2. What are extensive properties?
3. Define Quassi static process
4. Explain Zeroth law of thermodynamics
5. State Boyle's law.
6. Define Avogadro's law.
7. Write general gas equation
8. What are flow and nonflow process
9. Define isentropic process
10. State isobaric process
11. Define isothermal process
12. Define Heat source and Heat sink
13. Define 1st law of thermodynamics.
14. Define heat pump.
15. What is real gas?
16. Write Vanderwaal's gas equation.
17. What is ideal gas
18. What is superheated steam and wet steam?
19. What is dryness fraction
20. What is a boiler
21. Name types of compressor
22. Define radiation
23. Define thermal conductivity.
24. Define natural and forced convection.
25. What is conduction
26. Give modes of heat transfer.

SHORT QUESTIONS (4 MARKS)

1. Difference b/w heat and work
2. Difference b/w macroscopic and microscopic approach.
3. Find mass of gas occupies $5m^3$ at 7 bar and $200^{å}C$. take gas constant R= 287 j/kg K.
4. Difference b/w R and R_U
5. Prove PV=mRT
6. Derive an expression for workdone in polytropic process.
7. Derive an expression for workdone in isobaric process.
8. What is PMM? Explain
9. Give statement of 2nd law of TD
10. Write short notes on Carnot cycle
11. Explain Rankine cycle
12. Explain any one boiler mounting or accessories.
13. Give use of three boiler mountings

14. Advantages of multistage compression.
15. Explain axial flow compressor
16. Difference b/w reciprocating and rotary compressor
17. What is radiation? Explain its law
18. Use of composite walls
19. Explain Vanderwaal's gas equation

LONG QUESTIONS (10 MARKS)

1. 4kg of air at 400°C expands adiabatically. The work done by the air is 236kJ and the temp. Reduced to 150°C. Find the specific heat at constant pressure and constant volume.
2. Derive an expression for work done, change in internal energy and heart transferred during isothermal process.
3. A reversible heat engine receives heat from a high temp source at 150°C and rejects heat at low temp sink at 35°C. Calculate Carnot efficiency.
4. A reversible Carnot engine converts one sixth of heat into work. When temp is reduced to 62°C its efficiency is doubled. Find its temp of source and sink
5. Explain constriction and working of Lancashire boiler.
6. Derive an expression for work input in a single stage air compressor.
7. Explain construction and working of Babcock and Wilcox boiler.
8. A single stage air compressor required to compress 72 m^3 of air per minute form 20°C and one atm pressure to eight atm pressures. Find temp. At the end of compression, power and heat rejected. Compression process is adiabatic.