QUESTION BANK

THERMAL ENGINEERING-2

4TH SEMESTER

CHAPTER-1(Performance Of I.C Engine) (2 MARKS)

1. Define I.C Engine and give some example.
2. Define mechanical efficiency & indicated thermal efiiciency.
3. Define relative Efficiency & brake thermal efficiency.
4. What do you mean effective pressure.
5. Define Specific fuel consumption.
6. Define air-fuel ratio of I.C engine.
7. What is the calorific value of fuel.

(5 MARKS)

1. What is I.C engine ? What are the different parameter And efficiency are required to judge the performance of I.C engine.
2. Compare two stroke and four stroke engine.

(10 MARKS)

All problem from book related to efficiency

CHAPTER-2(Air Compressor) (2 MARKS)

1. What is the function of an compressor.
2. Write some industrial use of compressed air.
3. Classify air compressor.
4. Define the term bore and stroke of compressor.
5. What is free air delivery or FAD.
6. Define volumetric efficiency of air compressor.
7. Differentiate between single acting compressor and double acting compressor.
8. Define between reciprocating compressor and rotary compressor.
9. Define swept volume.

(5 MARKS)

1. Explain the principle of operation of an air compressor.

(10 MARKS)

1. Describe the part and working principle of a single stage reciprocating air compressor.
2. Derive the workdone of a single stage reciprocating air compressor without clearance.
3. Derive the workdone of a single stage reciprocating air compressor with clearance.
4. Solving problem.

CHAPTER-3(Preparation of steam) (2 MARKS)

1. Define Steam and its uses.
2. Write the differentiate between gas and vapour.
3. What is the pure substance? Give some example.
4. Define critical point.
5. What do you mean by wet steam and Dry steam .
6. Define triple point of pure substance.
7. What is quality or dryness fraction between of steam?
8. What is the difference between vaporization and expression?
9. Define latent heat of fusion.
10. Define sensible heat of water.
11. Define vapour.
12. What do you mean by latent heat of vaporization.
13. What is a molar chart.
14. Draw PV and TS diagram of pure substance.

(5 MARKS)

1. Explain the formation of steam.
2. Problem

(10 MARKS)

1. Problem related to net flow percentage of vapour.

CHAPTER-4(Steam Generator) (2 MARKS)

1. Define boiler and its uses.
2. Classify boiler.
3. What is boiler mounting? Give some example.
4. What is boiler accessories? Give some example
5. What is the function of economizer.
6. What is the use of air preheater?
7. What do you mean by boiler draughts.
8. What are the function of boiler draughts.
9. Classify boiler draughts.
10. What do you mean by mechanical draught?

(5 MARKS)

1. Write comparison between firetube and water tube boiler.
2. Explain forced draughts with a neat sketch.
3. Write shot note on induced draughts.
4. Explain the balanced draughts.
5. What is a boiler? Write different types of boiler and its important terms.
6. Write short notes on boiler mounting and boiler accessories.

(10 MARKS)

1. Explain the construction and working of a Cochran boiler with a neat sketch.
2. Explain the construction and working of a Lancashire boiler with the help of suitable sketch.
3. Describe with a neat diagram, the construction and working of a babcock and wilcox water tube boiler.
4. What is boiler draught? Discuss the different type of boiler draught?

CHAPTER-5(Steam power cycle) (2 MARKS)

1. Draw the P-V and T-S diagram of a Carnot cycle with vapour.
2. What is steam power plant.
3. What is efficiency of Rankine vapor cycle ? 2018
4. Neatly layout the steam power plant by block diagram?2017
5. In which way Rankine cycle is different from the Carnot cycle?2017
6. What are the main components of steam power plant.2015
7. What are the reason for modification of Rankine cycle.2015
8. Write down the methods to improve the efficiency of Rankine cycle.
9. What is re generation?
10. Why reheat cycle is required in Rankine cycle.
11. Define steam rate and heat rate?
12. What is back work ratio and work ratio?

(5 MARKS)

1. Derive work and efficiency of carnot vapour cycle with P-V and T-S diagram.2018,2015
2. Explain and derive work and efficiency of Rankine cycle with P-V, T-S and H-S diagram.
3. Why carnot vapour cycle is not practical for a steam power plant.
4. Write short note on carnot vapour cycle .
5. Differentiate between Carnot vapour cycle and rankine cycle.
6. What are the effect of various end condition in Rankine Cycle.
7. Explain Mean temperature of heat addition.
8. Give a layout of steam power plant.

(10 MARKS)

1. Explain reheat Rankine cycle with a neat sketch along with T-S and h-s diagram
2. Explain Regeneration Rankine cycle.
3. Solvine problem.

CHAPTER-6(Heat transfer) (2 MARKS)

1. What is heat transfer?
2. What are the different modes of heat transfer.2017
3. State Fourier’s law of heat conduction ?2016,2015
4. Define thermal conductivity.
5. Define Newton’s law of cooling?2017,2015
6. State Stefan Boltzmann law.2016,2015
7. What is Kirchoff’s law?2018
8. Define emissivity?
9. What is black body radiation?2018
10. What is Opaque body and White body?
11. What is absorptivity?
12. Define transmissivity?

(5 MARKS)

1. Establish the relationship of emissivity to absorptivity, reflectivity and transmissivity.2017,2016
2. Explain various modes of heat transfer.2018,2016
3. Explain Convective heat transfer and Newton’s law of cooling.2018,2016
4. Explain Fourier’s law of heat conduction? State abo assumption.2017,2015
5. Explain black body radiation?

(10 MARKS)

1. Explain fourier’s law of heat conduction? Explain the term thermal conductivity? State abo assumption of Fourier’s law.