BE Semester-__V__ (Mechanical) Question Bank

(Thermal Engineering)

All questions carry equal marks(10 marks)

Q.1	Explain the working of Rankine cycle on T-s diagram. Draw the line sketch diagram of Rankine cycle component.
Q.2	Derive the equation of efficiency of Rankine cycle with pump work and without pump work.
Q.3	Draw the general layout of thermal power plant. Explain the four circuit of thermal power plant in detail.
Q.4	Explain the ten points to be considered for selection of thermal power plant.
Q.5	Explain the unique feature of high pressure boiler. Explain the working of La-Mont boiler with neat sketch.
Q.6	State ten advantages of high pressure boiler. Explain the construction and working of Lo-effler boiler with neat sketch.
Q.7	Explain the different types of superheaters. Explain the different methods to control superheat.
Q.8	Write a short note on Supercritical boiler and super charged boiler.
Q.9	Explain the Principle, construction and working of Benson boiler with neat sketch. State five advantages of using it.
Q.10	Write a short note on Schmidt-Hartmann boiler and Velox boiler.
Q.11	Explian the Overfeed stokers and Underfeed stokers system.
Q.12	Write a short note on long flame burner and short flame burner.
Q.13	Write a short note on cyclone burner and turbulent burner.
Q.14	Write a short note on coal storage and coal preparation system.
Q.15	What is draught? What is the application of draught? Give the classification of draught and explain it.
Q.16	Differentiate the forced draught and induced draught system. State the advantages and disadvantages of Artificial draught over the natural draught.
Q.17	State the different types of ash handling systems. Explain the mechanical system for ash handling.
Q.18	Compare the hydraulic and pneumatic system for ash handling.
Q.19	Explain the principle , construction and working of electro-static precipitators with neat sketch.
Q.20	What is condenser? What are the advantages of using it in power plant. Give the classification of condenser.
Q.21	Explain the principle , construction and working of surface condenser with neat sketch.
Q.22	State the different sources of air leakages in condenser, State the effect of air leakages on the performance of condenser.
Q.23	Classify the jet condenser. Explain construction and working of any two jet condenser with neat sketch.
Q.24	Explain the principle , construction and working of Barometric Jet condenser and Ejector condenser with neat sketch.
Q.25	Write a short note on parallel flow jet condenser and counter flow jet condenser.
Q.26	What is cooling tower? Classify the cooling tower and explain it.

Q.27	State the Different types of impurities found in feed water and also state importance of boiler feed water treatment.
Q.28	Explain the formation, corrosion, priming, foaming in detail with respect to feed water.
Q.29	Write short note on hot lime soda process.
Q.30	Write short note on zeolite ion exchanger.
Q.31	Write a short note on Air and water Pollution problems of a thermal power station.
Q.32	State the different types of pollutants from thermal power plant. Explain their effects.
Q.33	Write a short note to control of SO2 , NO2 particulates in fuel gases from thermal power plant.
Q.34	Write a short note Different types of separators and precipitators for pollutants from thermal power plant.
Q.35	Explain fission and fusion with respect to nuclear reaction. State the different types of nuclear reaction.
Q.36	Draw the neat sketch of General components of Nuclear reactor. Explain the function of it.
Q.37	Explain the Principle, Construction and Working of Pressurised Water Reactor with neat sketch.
Q.38	Explain the Principle, Construction and Working of Boiling Water Reactor with neat sketch.
Q.39	Explain the Principle, Construction and Working of CANDU Reactor with neat sketch.
Q.40	What is PH value of feed water? Explain rapid tests for softness of water.