

**BE Semester- \_\_\_\_\_ (Mechanical Engineering) Question Bank**

**(Energy Conversion Systems)**

**All questions carry equal marks(10 marks)**

Q.1	What is the reason for variation of specific heat of gases? State the effects of variable specific heat on air standard efficiency of Otto cycle.
Q.2	Write a short note on Vander Waals equation.
Q.3	Define the compressibility factor. Write a short note law of corresponding state.
Q.4	What is reduced coordinates? Explain the generalized compressibility chart.
Q.5	What do you mean by Dissociation? Explain its effect of it on temperature at different mixture strength and on power.
Q.6	Explain the effect of fuel-air ratio on efficiency, maximum power, maximum temperature and maximum pressure of fuel air cycle.
Q.7	Compare the fuel air cycle and actual cycle of SI engines.
Q.8	Explain five losses of actual cycle of SI engines.
Q.9	State the objectives of supercharging in I C engine. Explain the effect of supercharging on power output, mechanical efficiency, fuel consumption.
Q.10	Write a short note on methods of supercharging.
Q.11	Write a short note on different supercharger used in engines.
Q.12	Explain the principle and working of simple carburettor. Also state its limitations.
Q.13	State the requirement of Diesel injection systems. State the different types of Diesel injection system.
Q.14	Explain the Air injection system. State its advantages and disadvantages.
Q.15	Write a short note on solid injection system of Diesel engine.
Q.16	Explain the working of fuel pump in Diesel engine with neat sketch.
Q.17	Write a short note on fuel injector in Diesel engine.
Q.18	State the different types of nozzle used in fuel injector. Explain the different types of nozzle with neat sketch.
Q.19	Explain the requirements of ignition system of Diesel engine. State the different types of ignition system used in Diesel engine.
Q.20	Explain the working of batter ignition system with neat sketch.
Q.21	Explain the working of Magneto ignition system with neat sketch.
Q.22	Explain the construction and working of spark plug with neat sketch.
Q.23	Write a short note on ignition timing with respect to Diesel engine.
Q.24	Write a short note on electronic ignition systems.
Q.25	What is the necessity of cooling system in I C Engine? State the different types of cooling system used in I C Engine.
Q.26	Write a short note on Air cooling system used in I C Engine.
Q.27	State the different types of water cooling system used in I C engine. Explain any two system with neat sketch.
Q.28	Explain the working of Thermo-syphon cooling and Thermostat cooling system used in I C Engine with neat sketch.
Q.29	Explain the working of pressurised water cooling and evaporative cooling system used in I C Engine.
Q.30	Compare the water cooling and Air cooling system used in I C Engine.

Q.31	State the function of lubricating system used in I C Engine. State the properties of good lubricating oil.
Q.32	State the types of different lubricating system used in I C Engine. Explain working of any two with neat sketch
Q.33	State the different required properties of fuels used in I C Engine. Explain Octane number and Cetane number.
Q.34	Write a short note on alternate fuels used in I C Engine
Q.35	Write a short note on Morse test used in I C Engine.
Q.36	Write a short note on heat balance sheet of I C Engine.
Q.37	Explain the construction and working of Vapour compression cycle used in refrigeration process.
Q.38	Explain the construction and working of Vapour absorption cycle used in refrigeration process.
Q.39	Draw the Psychometric chart. Explain any two Psychometric process on Psychometric chart.
Q.40	State and Explain the Dalton's law of partial pressure. Write a short note on adiabatic mixing of perfect gases.