

BE Semester- __VII__ (Mechanical Engineering) Question Bank

(Power Plant Engineering)

All questions carry equal marks(10 marks)

Q.1	Define steam nozzle. Explain the different types of nozzle. Derive the equation of exit velocity of steam nozzle.
Q.2	Derive the equation for condition of maximum discharge through a steam nozzle.
Q.3	Define nozzle efficiency. Explain the effect of friction in nozzle and physical significance of critical pressure ration in steam nozzle.
Q.4	Explain the supersaturated flow of steam through a nozzle and the significance of Wilson's line. State the effects of supersaturation in a steam nozzle.
Q.5	Explain the principle of operation of steam turbine. Explain the velocity diagram of an Impulse turbine.
Q.6	Give the classification of steam turbine. Explain the principle, construction and working of an impulse turbine with neat sketch.
Q.7	Differentiate the impulse turbine and reaction turbine. Define diagram efficiency, stage efficiency and nozzle efficiency.
Q.8	Explain the principle, construction and working of reaction turbine. Explain the Degree of Reaction with neat sketch.
Q.9	Derive the equation of condition of maximum efficiency of an Impulse turbine.
Q.10	Derive the equation of condition of maximum efficiency of an reaction turbine.
Q.11	What is compounding of turbine? Explain the principle, construction and working of Velocity compounding of an Impulse turbine with neat sketch.
Q.12	What is the need of compounding of turbine? Explain the principle, construction and working of Pressure compounding of an Impulse turbine with neat sketch.
Q.13	State the different methods of compounding of steam turbine. Explain any one in detail with neat sketch.
Q.14	What do you understand by the term 'height of blades' as applied to a reaction turbine? Explain the different losses in steam turbine.
Q.15	Explain the pass out turbine and back pressure turbine with neat sketch.
Q.16	Explain the working of Binary vapour cycle with neat sketch. What are its advantages?
Q.17	Explain the regenerative feed heating cycle used in steam power plant. List its advantages.
Q.18	Explain the process and purpose of reheating steam cycle in steam turbine application.
Q.19	What is reheat factor? Explain it with the h-s diagram. Define following terms with respect to multistage turbine a) Stage efficiency b) Internal energy c) Overall thermal efficiency.
Q.20	What is the need of governing system used in steam turbine? Explain the throttle governing system with neat sketch.
Q.21	State the different governing system used in steam turbine. Explain nozzle

	control governing system with neat sketch.
Q.22	What is the need of governing system used in steam turbine? State the different governing system used in steam turbine. Explain the bypass governing system with neat sketch.
Q.23	Give the classification of gas turbine. Explain working of open cycle gas turbine with line sketch diagram.
Q.24	Compare the gas turbine and steam turbine. Explain the working of closed cycle gas turbine on p-v and T-s diagram.
Q.25	Explain the closed cycle gas turbine with intercooling process with the help of line sketch and T-s diagram.
Q.26	Explain the closed cycle gas turbine with reheating process with the help of line sketch and T-s diagram.
Q.27	Explain the closed cycle gas turbine with regenerative process with the help of line sketch and T-s diagram.
Q.28	Draw the p-v and T-s diagram for actual Brayton cycle. Compare the open cycle gas turbine and closed cycle gas turbine.
Q.29	Derive the efficiency equation of Brayton cycle. State the used of gas turbine.
Q.30	Write a short note on combustion chambers of gas turbine.
Q.31	Write a short note on gas turbine blade cooling and gas turbine materials
Q.32	Write a short note on protective coating and lubricating system of gas turbine.
Q.33	Write a short note on starting and ignition systems of gas turbine.
Q.34	Explain the working of combined gas and steam turbine with neat sketch.
Q.35	Draw the neat sketch of combined gas and steam turbine. Explain its advantages.
Q.36	Write a short note on parameters affecting the efficiency of combined cycle system.
Q.37	Write a short note on Ram jet.
Q.38	Write a short note on Turbo jet.
Q.39	Write a short note on turbopropeller.
Q.40	What do you mean by jet propulsion? State its merits and demerits.