GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V • EXAMINATION – WINTER 2016

Subject code: 151906   **Date: 28/11/2016**
Subject Name: Conventional Power Engineering
Time: 10:30AM – 01:00PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of Steam tables are permitted**

Q.1	**(a)**	Classify Gas turbines and differentiate open and close cycles.	**07**
	(b)	Draw layout of modern thermal power plant.	**07**
Q.2	**(a)**	A steam power plant working on Rankine cycle has a range of operation from 50 bar to 0.1 bar. The steam temperature of inlet of turbine is 310 ºC. Calculate (a) work ratio (b) cycle efficiency (c) specific steam consumption.	**07**
	(b)	Explain Compounding of steam turbines with diagrams.	**07**
		OR	
	(b)	Explain combine cycle power plant.	**07**
Q.3	**(a)**	What is governing of steam turbines? Name types of governing and explain any one in detail.	**07**
	(b)	Classify steam turbines and briefly explain each	**07**
		OR	
Q.3	**(a)**	Explain Rankine cycle with line diagram, T-s and P-V diagrams.	**07**
	(b)	Explain load curves, load duration curves and cost of power plant.	**07**
Q.4	**(a)**	Draw the schematic diagram of a simple gas turbine cycle with inter-cooling, regeneration and reheating and also show on T-s diagram.	**07**
	(b)	Explain working of hydro-electric power generation plant with diagram and briefly explain type of hydraulic turbines.	**07**
		OR	
Q.4	**(a)**	Draw CANDU reactor and explain it.	**07**
	(b)	Explain Thermostat and Evaporative cooling system of Diesel Power Plant.	**07**
Q.5	**(a)**	Describe briefly the function of a various component of a Pelton turbine with neat sketch.	**07**
	(b)	Draw Nuclear reactor and briefly explain function, material of each components.	**07**
		OR	
Q.5	**(a)**	Draw essential components of a Diesel Power Plant and list down each system.	**07**
	(b)	Define and explain briefly: Load factor, Plant use factor, Demand factor, diversity factor.	**07**

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