Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–IV • EXAMINATION – WINTER • 2014

Subject Code: X41903 **Date: 31-12-2014**

Subject Name: Power Plant Engineering

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain pollution from thermal power plants and its control.	**07**
	(b)	Discuss the factors which are considered while selecting a site for a thermal power plant.	**07**
Q.2	**(a)**	How the FBC boilers are classified? Discuss the working any type of such boiler.	**07**
	(b)	Explain Benson boiler with neat sketch.	**07**
		OR	
	(b)	Write a short note on reheaters.	**07**
Q.3	**(a)**	Explain the working of screw conveyor with its merits.	**07**
	(b)	What are the advantages and disadvantages of pulverized coal firing?	**07**
		OR	
Q.3	**(a)**	Explain the working of a ball & race mill with neat sketch.	**07**
	(b)	How the dust collectors are classified? Explain the working of cyclone dust collector.	**07**
Q.4	**(a)**	Why draught is necessary in boilers? Explain natural draft with suitable illustration.	**07**
	(b)	Derive an expression for chimney height in order to obtain a draught of h mm of water column if boiler used m kg of air/kg of fuel. Assume the atmospheric air temperature as T_1 and exhaust gas temperature as T_2. Also deduce the formula for the condition of maximum discharge of exhaust gases through chimney.	**07**
		OR	
Q.4	**(a)**	Discuss the working of an evaporative condenser with neat sketch.	**07**
	(b)	Write short note on priming & foaming.	**07**
Q.5	**(a)**	Draw a schematic diagram of diesel power plant and discuss its operation.	**07**
	(b)	Explain CANDU type reactor supported with diagram.	**07**
		OR	
Q.5	**(a)**	Explain the following terms: 1. Diversity factor 2. Load factor 3. Maximum demand 4. Utilization factor	**07**
	(b)	Discuss the requirement of fuel injection system and explain the working of common rail injection system.	**07**

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