Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

P.D.D.C Sem-III Examination May 2011

Subject code: X30904

Subject Name: Electrical Power

Date:27/05/2011 **Time: 10.30 am – 01.00 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)**	What is power factor ? How low power factor affects the system ? State different methods for power factor correction. Explain one of them.	**07**
	(b)	Classify the underground cables according to insulation used, voltage rating and number of cores, Sketch a typical 3- core cable and label the important parts.	**07**
Q.2	**(a)**	Name the place with reasons where the following conductors are used. (i) All aluminum conductor (ii) ACSR conductor (ii) Stay wire (iv) GI wire	**07**
	(b)	Explain the schematic arrangement of Thermal power station	**07**
		OR	
	(b)	Explain the schematic arrangement of Hydro power station	**07**
Q.3	**(a)**	State the points for site selection of Nuclear Power Station. Also state the advantages and disadvantages of Nuclear Power Station.	**07**
	(b)	State the Merits and demerits of wind energy . Also state the application of Wind energy.	**07**
		OR	
Q.3	**(a)**	Describe with the help of a neat sketch the working of solar power plant. What are its salient features.	**07**
	(b)	What do you understand by combine cycle power plant? What are their salient features? Discuss the popular systems.	**07**
Q.4	**(a)**	Compare(i) radial distribution system(ii) ring or loop distribution system (iii) grid distribution system. Also state their applications.	**07**
	(b)	Explain different types of equipments used in Substation	**07**
		OR	
Q.4	**(a)**	State the different types of conductors. Explain properties of good conductor material.	**07**
	(b)	Explain Resonant Grounding and Voltage transformer earthing.	**07**
Q.5	**(a)**	What are the advantages of Neutral Grounding? Explain the reactance grounding.	**07**
	(b)	State different types of insulators. Explain Pin type insulator.	**07**
		OR	
Q.5	**(a)**	Write short note on (i) Skin effect (ii) Effect of earth on capacitance of transmission line.	**07**
	(b)	Distinguish between bundle conductor 3-phase line with two conductors per bundle and double circuit 3-phase line. What differences in electrical characteristics do you expect between the two lines?	**07**

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