Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II (Old course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 1724505 Date:14/05/2015

Subject Name: Power Quality(Major Elect-III)

Time: 02:30 pm to 5:00 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 are the major power quality issues? Explain in detail.	07
	(b)	Define power quality. Explain the reasons for increased concern in power quality.	07
Q.2	(a)	Draw the CBEMA curve for transient over voltages and explain.	07
	(b)	What are the different sources of transient over voltages? Discuss the capacitor switching transient.	07
		OR	
	(b)	Discuss various causes of voltage flicker and their effects. Suggest various means to reduce flickers.	07
Q.3	(a)	Explain briefly about the phenomena of how current distortion affects the voltage distortion under the presence of harmonics.	07
	(b)	Explain the following causes of sags. (i)Voltage sag due to motor sag (ii)Voltage sag due to single line to ground fault.	07
		OR	
Q.3	(a)	What are the Solutions at the End-User Level for improving the overall voltage sag performance? Explain in detail.	07
	(b)	Explain the various causes and effects of voltage sags.	07
Q.4		Define for the following terms related with IEEE standards. (i)SCR (ii) Load current (iii) Short circuit current (iv)Total harmonic distortion (v)Total demand distortion (vi) PCC (vii) non linear loads	14
		OR	
Q.4	(a)	Explain Effects of Harmonic Distortion in detail.	07
Q.4	(b)	Explain Principles for Controlling Harmonics.	07
Q.5	(a)	Bring out the significance of Power quality monitoring. What are the important power quality monitoring objectives?	07
	(b)	Explain the harmonic analyzer and disturbance analyzer.	07
		OR	
Q.5	(a)	Explain the following: (i) Harmonic sources from commercial loads. (ii) Harmonic sources from industrial loads.	07
	(b)	Explain the following: (i) Low pass filters.(ii) Power conditioners.	07

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