F • G1167 Pages: 2

Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: EE465
Course Name: Power Quality

Max. Marks: 100 Duration: 3 Hours

PART A
### Answer all questions, each carries 5 marks.

		Marks
1	Illustrate about notching in power quality	(5)
2	Explain the following harmonic indices:	(5)
	a)THD	
	b)TDD	
3	Define windowing. How window function can be used for harmonic analysis	(5)
4	What are the objectives of power quality monitoring?	(5)
5	With neat diagram, explain shunt active filters.	(5)
6	Explain hybrid filters.	(5)
7	Explain common mode rejection ratio and common mode noise.	(5)
8	Distinguish between conducted and radiated emission	(5)

PART B
Answer any two full questions, each carries 10 marks.

9	a)	Explain voltage unbalance and voltage flicker	(5)
	b)	Find the total harmonic distortion of the waveform having magnitude of fundamental component unity and 3rd, 5th, 7th and 9th harmonics, reciprocal of harmonic number.	(5)
10	a)	What is the need of power quality standards? Mention the various IEEE standards for power quality	(10)
11	a)	Differentiate between harmonics and interharmonics	(5)
	b)	Explain the mechanism of harmonic generation.	(5)

PART C
Answer any two full questions, each carries 10 marks.

12	Obtain the Fourier series expansion of given function	(10)
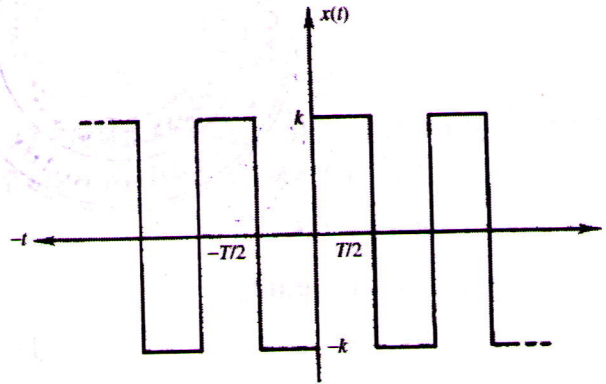
13 a) Define voltage flicker. What are the major flicker sources?   (4)

   b) With the help of block diagram, explain in detail about the flickermeter.   (6)

14 a) How can the aperiodic signals be analysed? Write the expression   (5)

   b) What are the information that are obtained from monitoring as part of site   (5)
       surveys?

PART D
Answer any two full questions, each carries 10 marks.

15   Explain the procedure for designing the harmonic filter   (10)

16   Explain power quality issues of grid connected renewable energy sources.   (10)

17 a) Explain the procedure to shield radiated noise.   (5)

   b) Distinguish between active and passive filter.   (5)

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