Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: EE465

Course Name: Power Quality

Max. Marks: 100   Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.   Marks

1	Define power quality .What are the sources of power quality?	(5)
2	Define TIF and C-message weight factor.	(5)
3	Define windowing. How window function can be used for harmonic analysis?	(5)
4	What is the operation of spectrum analyzer?	(5)
5	What are the advantages and disadvantages of passive filter?	(5)
6	Explain hybrid filters.	(5)
7	Explain common mode noise and transverse mode noise.	(5)
8	Explain about high frequency EMI sources.	(5)

PART B

Answer any two full questions, each carries 10 marks.

9		Explain in detail about different power quality issues.	(10)
10	a)	With the help of waveform explain the term DC offset.	(4)
	b)	Explain the terms THD & DIN. How are they related to each other?	(6)
11		Explain about different sources of harmonics in electrical distribution system.	(10)

PART C

Answer any two full questions, each carries 10 marks.

12 a) Let f(x) be a function of period 2π such that   (10)

f(x) = 1, $-\pi < x < 0$

        = 0, $0 < x < \pi$

Sketch a graph of f(x) in the interval $-2\pi < x < 2\pi$. Find the Fourier series

of f(x).

13	a)	What is meant by aliasing?	(4)
	b)	Write short note on the power quality Monitoring Considerations.	(6)

14 a) Mention the factors that should be considered for selecting the instrument. (5)

    b) What are the types of power quality measurement equipment? (5)

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

15   Discuss the steps involved in harmonic filter design. (10)

16 a) With neat diagram, explain the operation of series active filter to improve power Quality. (5)

    b) Explain various power quality conditioners for smart grid. (5)

17 a) Explain about power quality issues of grid connected energy sources. (5)

    b) What are the methods to mitigate EMI? (5)

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