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B.Tech. Degree VIII Semester Examination April 2019

EE 15-1804 (E3) POWER QUALITY (2015 Scheme)

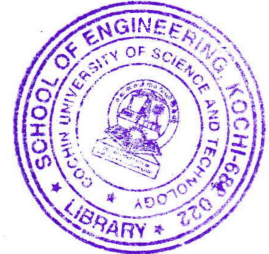
Time: 3 Hours

Maximum Marks: 60

PART A (Answer *ALL* questions)

(10 × 2 = 20)

- I. (a) Define Power Quality? What do you mean by voltage and current quality?
- (b) What are the reasons for the increased concerns in power quality?
- (c) What are the different solutions applied at the end-user level against voltage sag?
- (d) What are the different sources of Transients?
- (e) Discuss the switching transient problems associated with loads?
- (f) Briefly explain Triplex harmonics and its effects?
- (g) Explain the most commonly used Harmonic Indices?
- (h) Briefly explain the different devices used for voltage regulation?
- (i) What are the common objectives of power quality monitoring?
- (j) Briefly explain the different power quality monitoring standards?



PART B

(4 × 10 = 40)

- II. What are the major power quality issues? Explain in detail. (10)
- OR**
- III. (a) Explain the different steps involved in power quality evaluation? (6)
- (b) Discuss briefly about CBEMA and ITI curves? (4)
- IV. (a) What do you mean by Voltage sags and Interruptions? What are the different sources and effects of voltage sags and interruptions? (6)
- (b) What are the different measures that can be taken to reduce the number and severity of voltage sags and interruptions? (4)
- OR**
- V. (a) What are the principles of Overvoltage protection? (4)
- (b) Briefly explain the devices used for overvoltage protection? (6)
- VI. (a) What are the various effects of Harmonic Distortions? (6)
- (b) Discuss Interharmonics? (4)
- OR**
- VII. (a) Explain the role of Capacitors for voltage regulation in a power system? (4)
- (b) Briefly explain the different end-user capacitor applications? (6)
- VIII. Briefly explain the different types of power quality measurement equipments? (10)
- OR**
- IX. Explain briefly off-line and on-line power quality data assessment? (10)