BTS–VIII(S)–07.19–0927 Reg. No. | | | | | | | | |

C

B.Tech. Degree VIII Semester Supplementary Examination July 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.

(b) What is the importance of power quality?

(c) Which are the different motor starting methods?

(d) What is ferroresonance?

(e) Find the total harmonic distortion of a voltage waveform with the following frequency makeup : fundamental V_1 = 114V, 3rd harmonic V_3 = 4V, 5th harmonic V_5 = 2V, 7th harmonic V_7 = 1.5V, 9th harmonic V_9 =1V.

(f) Briefly explain the terms THD and TDD.

(g) What is the difference between true power factor and displacement power factor?

(h) What are the end user capacitor applications?

(i) Explain briefly the transducer requirements for power quality monitoring.

(j) What are the power quality monitoring standards

PART B

(4 × 10 = 40)

II. Explain general classification of power quality problems. (10)

OR

III. (a) Explain the steps involved in power quality evaluation. (5)

(b) Draw ITI Curve and write the inferences. (5)

IV. Explain the procedures involved in estimating voltage sag performance. (10)

OR

V. Explain the devices for transient over voltage protection. (10)

VI. (a) Explain the sources of harmonics. (8)

(b) What is the effect of harmonics on transformers? (2)

OR

VII. (a) Explain the devices for voltage regulation. (8)

(b) Explain briefly source of flicker. (2)

VIII. Explain the different power quality measurement equipments. (10)

OR

IX. (a) Explain the methods of assessment of power quality measurement data. (6)

(b) What are the monitoring considerations for power quality? (4)

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