

Reg. No.....

Name.....

M.TECH DEGREE EXAMINATION

Model Question Paper -II

First Semester

Branch: Electrical and Electronics Engineering;

Specialization: Power Systems

MEEPE 105-3 POWER QUALITY

(2013 admission onwards)

[Regular/ Supplementary]

Time: Three hours

Maximum: 100 marks

Answer all questions

1. (i) (a) Explain the various types of power quality disturbances and its causes? (12)
(b) Explain power acceptability curves? (8)
(c) Explain power quality standards? (5)

OR

- (ii) (a) Write short notes about THD, TIF, DIN and C-message weights? (8)
(b) Explain the causes, effects and cures for transient disturbances? (12)
(c) Explain power quality? (5)

2. (i) (a) Explain the effects of harmonics on power system equipments and load? (8)
(b) Write short notes about triplex harmonics? (5)
(c) Explain the modeling of power system under non-sinusoidal conditions? (12)

OR

- (ii) (a) How harmonics are produced and what are the harmonic introducing devices? (10)
(b) Explain IHD, TDD, true rms, displacement power factor and distortion power? (15)

3. (i) (a) Explain how power factor can be improved using STATCOM? (12)
(b) Explain passive compensation? (8)
(c) What are the drawbacks of poor power factor? (5)

OR

- (ii) (a) Explain power factor correction in dc-dc boost converter? (8)
(b) Explain 3-phase APFC and its control techniques? (12)
(c) Write short notes about impedance scan analysis? (5)

4. (i) (a) Explain d-q domain control for harmonic filtering using shunt active filter? (15)
(b) Explain typical grounding and wiring problem with solutions? (10)

OR

- (ii) (a) Explain DVR for sag, swell and flicker problems? (10)
(b) Explain UPS, CVT and series active filter? (15)