

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

M.Tech I Year II Semester Regular Examinations August-2026

POWER QUALITY

Time: 3 Hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

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|---|---|---|-----|----|----|
| 1 | a | What is power quality? How to justify power quality is a voltage quality? | CO1 | L1 | 6M |
| | b | Why we are concern about power quality? | CO1 | L1 | 6M |

OR

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|---|---|--|-----|----|----|
| 2 | a | Define crest factor, DC offset, coupling, noises, and harmonics. | CO1 | L2 | 6M |
| | b | Define flicker, notching, total harmonic distortion, frequency deviation, and voltage fluctuation. | CO1 | L2 | 6M |

UNIT-II

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|---|---|---|-----|----|----|
| 3 | a | Write a short note on power frequency variations. | CO2 | L1 | 6M |
| | b | Explain the sources of impulsive transients. | CO2 | L2 | 6M |

OR

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|---|---|--|-----|----|----|
| 4 | a | Draw and explain the impulsive transients. | CO2 | L1 | 6M |
| | b | Draw and explain the oscillatory transients. | CO2 | L1 | 6M |

UNIT-III

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|---|---|--|-----|----|----|
| 5 | a | What is harmonic distortion? Explain clearly. | CO3 | L2 | 6M |
| | b | Discuss about the voltage versus current distortion. | CO3 | L2 | 6M |

OR

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|---|---|---|-----|----|----|
| 6 | a | Explain the comparison between harmonics versus transients. | CO3 | L2 | 6M |
| | b | What are effects of harmonics? Explain clearly. | CO3 | L2 | 6M |

UNIT-IV

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|---|---|--|-----|----|----|
| 7 | a | Explain the concept of grounding and bonding in electrical systems. | CO4 | L2 | 6M |
| | b | Discuss electrical grounding and bonding importance in ensuring safety and system reliability. | CO4 | L2 | 6M |

OR

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|---|---|--|-----|----|----|
| 8 | a | Explain different methods used for measuring earth resistance. | CO4 | L2 | 6M |
| | b | Describe the procedure for conducting earth resistance tests. | CO4 | L2 | 6M |

UNIT-V

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|---|---|--|-----|----|----|
| 9 | a | Explain about the historical perspective of power quality measuring instruments. | CO5 | L2 | 6M |
| | b | What are the important factors that should be considered when selecting the power quality measuring instruments? | CO5 | L1 | 6M |

OR

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|----|---|---|-----|----|----|
| 10 | a | What are the basic categories of power quality measuring instruments? | CO5 | L1 | 6M |
| | b | Explain in detailed about disturbance analyzers and oscilloscopes. | CO5 | L2 | 6M |

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