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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)B.Tech IV Year I Semester Regular Examinations February-2022  
POWER QUALITY

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

**PART-A**

(Answer all the Questions 5 x 2 = 10 Marks)

- |   |   |   |    |    |
|---|---|---|----|----|
| 1 | a | What is Voltage Surge?                            | L1 | 2M |
|   | b | Define oscillatory transient.                     | L1 | 2M |
|   | c | What does TDD mean?                               | L2 | 2M |
|   | d | What are revenue meters?                          | L3 | 2M |
|   | e | Give the list of two groups custom power devices. | L1 | 2M |

**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

- |   |   |  |    |    |
|---|---|--|----|----|
| 2 | a | What is power quality? Why we are concern about power quality? | L1 | 5M |
|   | b | Draw and explain ITI curve.                                    | L2 | 5M |

**OR**

- |   |   |  |    |    |
|---|---|--|----|----|
| 3 | a | Classify the different types of power quality issues | L2 | 5M |
|   | b | Explain about the power quality evaluation procedure | L1 | 5M |

**UNIT-II**

- |   |   |  |    |    |
|---|---|--|----|----|
| 4 | a | Explain the effect of line drop compensation on the voltage profile. | L1 | 5M |
|   | b | Explain the short duration voltage variation.                        | L1 | 5M |

**OR**

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|---|---|--|----|----|
| 5 | a | Explain the role of capacitors for the voltage regulation. | L1 | 5M |
|   | b | Explain the impulsive and oscillatory transients.          | L1 | 5M |

**UNIT-III**

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|---|---|--|----|----|
| 6 | a | Explain harmonic distortion evaluation procedure.              | L2 | 5M |
|   | b | Write the impact of voltage distortion and current distortion. | L3 | 5M |

**OR**

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|---|---|---|----|----|
| 7 | a | Explain the principles of controlling harmonics.                            | L1 | 6M |
|   | b | Explain the indices used for measuring of harmonic content in the waveform. | L1 | 4M |

**UNIT-IV**

- |   |   |   |    |    |
|---|---|---|----|----|
| 8 | a | Write a short note on power quality monitoring standards. | L2 | 6M |
|   | b | Explain about the power quality bench marking.            | L1 | 4M |

**OR**

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|---|---|---|----|----|
| 9 | a | Explain about the flicker meters.                           | L2 | 5M |
|   | b | Explain the various power quality monitoring considerations | L1 | 5M |

**UNIT-V**

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|----|---|--|----|----|
| 10 | a | What is current limiter? Discuss the operation of a Solid-state current limiter. | L2 | 5M |
|    | b | Explain the principle of DVR operation used for sag mitigation.                  | L1 | 5M |

**OR**

- |    |   |  |    |    |
|----|---|--|----|----|
| 11 | a | Discuss the operation of Static Series Compensators. | L2 | 5M |
|    | b | Explain about Dynamic Voltage Restorer.              | L3 | 5M |

\*\*\*END\*\*\*