



NPTEL ONLINE CERTIFICATION COURSES

Course Name: *Analog Electronic Circuits*

Faculty Name: *Dr. Pradip Mandal*

Department : *Electronics and Electrical Communication Engineering*

Topic:

Revisit to pre-requisite topics

CONCEPTS COVERED

Concepts Covered:

- ☐ KCL and its application in Analog circuit
- ☐ KVL and its application in Analog circuit
- ☐ Electrical Technology theory and its application
- ☐ Analysis of non-linear circuit and its approximation



Flow of Discussion (Bottom-up) - *Components*

- **System /Sub-systems**(*for specific application*)
 - **Modules** (*performing specific tasks*)
 - **Building blocks** (*having specific characteristics*)
 - **Components** (*devices/circuit elements*)
- **Week 1:**
 - Introduction and objective of this course;
 - Revisit to pre-requisite topics (Electrical Theory);
 - Starting with simple diode circuit and its analysis.
 - Revisiting BJT and MOSFET- operating principles, characteristic equations and equivalent circuits



Pre-requisite Electrical Technology

- **Kirchhoff Current Law (KCL)**

- **KCL is also valid for**
 - **A.C. current**
 - **Current in Laplace Domain**



Pre-requisite Electrical Technology (*contd...*)

- **Kirchhoff Voltage Law (KVL)**

- **KVL is also valid for**
 - **A.C. voltage**
 - **Voltage in Laplace Domain**



Pre-requisite Electrical Technology (*contd...*)

- **Thevenin equivalent source**

- **D.C.**
- **a.c.**
- **Mixed**

- **About notations**



Analysis of non-linear circuit and Approximation

- Simple diode circuit
- I-V characteristic of diode
- Input-Output transfer characteristic



Analysis of non-linear circuit (*contd...*)

- **Feeding signal into a non-linear circuit**



Conclusion

Conclusion:

- ❑ KCL and KVL and their applications in Analog circuit
- ❑ Electrical Technology theory and its application
- ❑ Analysis of non-linear circuit and its approximation





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*Thank
you*

