# REC309: ANALOG & DIGITAL ELECTRONICS ODD SEM

| S N | Topics | |
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| 1. | **UNIT-I** Special Diodes their characteristics and applications | |
| 2. | LED, | |
| 3. | Photo diode, | |
| 4. | Schottky diode, | |
| 5. | | |
| 6. | Tunnel diode; | |
| 7. | | |
| 8. | Introduction to Power devices | |
| 9. | Characteristics of SCR | |
| 10. | | |
| 11. | TRIAC, DIAC. | |
| 12. | | |
| 13. | | |
| 14. | **UNIT-II** Amplifier and Frequency Response- | |
| 15. | Introduction to Amplifier, | |
| 16. | Transfer Function, | |
| 17. | | |
| 18. | Frequency Response of Common Emitter, | |
| 19. | | |
| 20. | | |
| 21. | Multistage amplifier | |
| 22. | | |
| 23. | . | |
| 24. | Frequency response of Common source MOSFET Amplifier | |
| 25. | | |
| 26. | **UNIT-III** Feedback- General feedback structure; | |
| 27. | properties of negative feedback; | |
| 28. | | |
| 29. | series-series, series-shunt, shunt-series and shunt-shunt feedback amplifiers. | |
| 30. | Oscillators-Basic principle of sinusoidal oscillator | |
| 31. | R-C Phase Shift oscillators | |
| 32. | Wein Bridge oscillators | |
| 33. | | |
| 34. | tuned oscillators | |
| 35. | Collpits and Hartley | |
| 36. | Crystal oscillator | |
| 37. | CLAP Oscillator. | |
| 38. | **UNIT-IV** Number System, | |
| 39. | | |
| 40. | | |
| 41. | Gate Level Minimization (up to three Variables), | |
| 42. | | |
| 43. | | |
| 44. | SOP, POS Simplification. | |
| 45. | | |
| 46. | | |
| 47. | Combinational Logic Circuits: | |
| 48. | Binary Adder/ Subtractor | |

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| **49.** | | |
| **50.** | Multiplexer/ Demultiplexer, | |
| **51.** | | |
| **52.** | Decoder/ Encoder | |
| **53.** | | |
| **54.** | Sequential Logic: Introduction to latches, | |
| **55.** | flip-flops- S-R, T, D, J-K. | |
| **56.** | | |
| **57.** | **UNIT-V** Registers & Counter: | |
| **58.** | Serial and parallel data transfer, shift left/right registers, | |
| **59.** | | |
| **60.** | universal shift register. | |
| **61.** | Mode N Counters | |
| **62.** | | |
| **63.** | ripple counters, synchronous counters, | |
| **64.** | | |
| **65.** | Ring/Johnson counters. | |
| **66.** | Memory: Introduction to ROM, RAM, PLA, PAL. | |
| **67.** | | |
| **68.** | | |

**Text Books:**


**Text Books:**

1. A.S. Sedra and K.C. Smith "Microelectronics Circuits" Oxford University Press (India)
2. Malvino& Leach, "Digital Principles and applications" Tata Mc. Graw Hill
3. R.A. Gayakwad "Op amps and Linear Integrated Circuits" Prentice Hall of India.
4. Balbir Kumar and ShailB. Jain, "Electronic Devices and Circuits" Prentice Hall of India, 2007

**Reference Books**:

1. Taub & Schilling "Digital Electronics"- Tata McGraw Hill
2. Anil K. Maini, "Digital Electronics: Principles and Integrated circuits" Wiley India Ltd, 2008.
3. Millman, J. and Grabel A, "Microelectronics" McGraw Hill
4. Anand Kumar, "Switching Theory and Logic Design" Prentice Hall of India, 2008.
5. Aloke. K. Dutta, "Semiconductor Devices and circuits", Oxford University Press, 2008.