#  LESSON PLAN

#  TH2.ANALOGELECTRONICSANDOP-AMP

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| WEEK | CLASS PER WEEK (4) | BY: Niharika Sethy. Lect. ETC, 4TH SEM ELECTRICALFROM: 14.02.2023 TO 23.05.2023 |
|  |  | TOPICS TO BE COVERED |
| 1 | 1 | P-N Junction Diode , WorkingofDiode, V-I characteristic of PN junction Diode |
| 2 | DCloadline Important terms such as Ideal Diode , Knee voltage , junctions breakdown, |
| 3 | Zener breakdown, Avalanche breakdown, , |
| 4 | P-N Diode clipping Circuit |
| 2 | 5 | P-N Diode clipping Circuit |
|  | P-N Diode clamping Circuit |
| 6 | P-N Diode clamping Circuit |
|  | Thermistors, |
| 7 | Sensors & barretters |
| 8 | Zener Diode |
| 3 | 9 | Zener Diode |
| 10 | PIN Diode, Tunnel Diode |
|  | Classification of rectifiers |
| 11 | Classification of rectifiersAnalysis of half wave, full wave centre tapped and Bridge rectifiers |
| 12 | Analysis of half wave rectifiers and calculate dc output current and voltageRMS output current and voltage, Rectifier efficiency |
| 4 | 13 | Analysis of half wave rectifiers and calculate Ripple factor, Regulation , Transformer utilization factor, Peak inverse voltage |
| 14 | Full wave centre tapped and Bridge rectifiers and calculate:DC output current and voltage, RMS output current and voltage, Rectifier efficiency |
| 15 | Full wave centre tapped and Bridge rectifiers and calculate:Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage |
| 16 | Filters: Shuntcapacitorfilter ,Chokeinput filter, πfilter |
| 5 | 17 | **TRANSISTORS:**PrincipleofBipolarjunctiontransistor, Differentmodesofoperation oftransistorCurrent components in a transistor, |
| 18 | PrincipleofBipolarjunctiontransistor, Differentmodesofoperation oftransistorCurrent components inatransistor |
| 19 | Transistorasanamplifier |
| 20 | Transistorcircuit configuration&itscharacteristics, CBConfiguration, CEConfiguration, CCConfiguration |
| 6 | 21 | Transistorcircuit configuration&itscharacteristics, CBConfiguration, CEConfiguration, CCConfiguration |
| 22 | Transistorbiasing, Stabilization, Stabilityfactor |
| 23 | Transistorbiasing, Stabilization, Stabilityfactor |
| 24 | DifferentmethodofTransistorsBiasing, Base resistormethod, Collectortobasebias |
| 7 | 25 | DifferentmethodofTransistorsBiasing, Base resistormethod, Collectortobasebias |
| 26 | Selfbias or voltagedivider method |
| 27 | Practical circuit of transistor amplifierDCloadline andDCequivalent circuit, ACloadlineandACequivalentcircuit |
| 28 | PracticalcircuitoftransistoramplifierDCloadline andDCequivalent circuit, ACloadlineandACequivalentcircuit |
| 8 | 29 | Calculationofgain, Phasereversal |
| 30 | H-parametersoftransistors, SimplifiedH-parametersof transistors |
| 31 | Generalized approximate model, Analysis of CB amplifier |
| 32 | Generalized approximate model, Analysis of CE, amplifier using generalized approximate model |
| 9 | 33 | Generalized approximate model, Analysis of CC, amplifier using generalized approximate model Multistage transistor amplifier , R.C .coupled amplifier, Transformer coupled amplifier |
| 34 | Feedbackinamplifier, Generaltheory offeedback |
| 35 | Negativefeedback circuit, Advantageofnegativefeedback |
| 36 | Power amplifierandits classificationDifferencebetweenvoltageamplifierandpower amplifier |
| 10 | 37 | Transformercoupled classApoweramplifier |
| 38 | ClassApush–pullamplifierClassBpush–pullamplifier |
| 39 | Oscillators, Typesof oscillators, EssentialsoftransistoroscillatorPrincipleofoperationoftunedcollector, |
| 40 | Hartley , colpitt , |
| 11 | 41 | Phase shift, wein-bridge oscillator(no mathematical derivations) |
| 42 | Advantages of FET over BJT, Principle of operation of FET |
| 43 | ClassificationofFET |
| 44 | FET parameters(no mathematical derivation), DC drain resistance, AC drain resistance, Trans-conductance |
| 12 | 45 | BiasingofFET |
| 46 | BiasingofFET |
| 47 | General circuit simple of OP-AMP and IC–CA–741OPAMP ,Operational amplifier stages |
| 48 | Equivalent circuit of operational amplifierOpen-loop OP-AMP configuration |
| 13 | 49 | OPAMP with feedback, Inverting OP-AMP |
| 50 | Non inverting OP-AMP |
| 51 | Voltagefollower& buffer, , |
| 52 | Differentialamplifier |
| 14 | 53 | Adder orsummingamplifier |
| 54 | Subtractor, Integrator,  |
| 55 | Differentiator, Comparator |
| 56 | Revision |
| 15 | 57 | Revision |
| 58 | QUESTION AND ANSWER DISCUSSION |
| 59 | QUESTION AND ANSWER DISCUSSION |
| 60 | QUESTION AND ANSWER DISCUSSION |



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| **Sl.No** | **Nameof Authors** | **TitleoftheBook** | **Name ofthepublisher** |
| 1 | Sanjeev Gupta | Electronic DevicesandCircuits | DhanpatRaiPublications |

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