| PNS SCHOOL OF ENGINEERING &TECHNILOGY<br>MARSHAGHAI,KENDRAPARA<br>LESSON PLAN | | |
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| **SUBJECT:Th2. Analog Electronics and OP-AMP** | **NO. OF CLASS ALLOTED -60** | **NAME OF THE FACULTY:Er.AMARENDRA SAHOO** |
| **WEEK** | **DAY** | **THEORY TOPIC** |
| 1ST | 1 | D. Course Content:<br>P-N JUNCTION DIODE:<br>P-N Junction Diode |
| | 2 | Working of Diode<br>V-I characteristic of PN junction Diode. |
| | 3 | DC load line<br>Important terms such as Ideal Diode, Knee voltage |
| | 4 | Junctions break down.<br>Zener breakdown |
| | 5 | Avalanche breakdown |
| 2ND | 1 | P-N Diode clipping Circuit. |
| | 2 | P-N Diode clamping Circuit |
| | 3 | INSIDE QUESTION DISCUSSION |
| | 4 | DOUBT CLEARING CLASS |
| | 5 | SPECIAL SEMICONDUCTOR DEVICES:<br>Thermistors, Sensors & barretters |
| 3RD | 1 | Zener Diode |
| | 2 | Tunnel Diode |
| | 3 | PIN Diode |
| | 4 | INSIDE QUESTION DISCUSSION |
| | 5 | DOUBT CLEARING CLASS |
| | 1 | RECTIFIER CIRCUITS & FILTERS:<br>Classification of rectifiers<br>Analysis of half wave, |
| | 2 | full wave centre tapped and Bridge rectifiers |

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| 4TH | 3 | calculate:<br>DC output current and voltage |
| | 4 | RMS output current and voltage |
| | 5 | Rectifier efficiency |
| 5TH | 1 | Ripple factor |
| | 2 | Regulation |
| | 3 | Transformer utilization factor |
| | 4 | Peak inverse voltage |
| | 5 | Filters: |
| 6TH | 1 | |
| | 2 | Choke input filter |
| | 3 | π filter /DOUBT CLEARING CLASS |
| | 4 | INSIDE QUESTION DISCUSSION |
| | 5 | DOUBT CLEARING CLASS |
| 7TH | 1 | TRANSISTORS:<br>Principle of Bipolar junction transistor |
| | 2 | Current components in a transistor |
| | 3 | Different modes of operation of transistor |
| | 4 | Current components in a transistor |
| | 5 | Transistor as an amplifier |
| | 1 | Transistor circuit configuration & its characteristics<br>*CB Configuration* |
| | 2 | CE Configuration<br>CC Configuration |

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| 8TH | 3 | TRANSISTOR CIRCUITS:<br>Transistor biasing<br>Stabilization |
| | 4 | Stability factor<br>Different method of Transistors Biasing |
| | 5 | Base resistor method<br>Collector to base bias |
| 9TH | 1 | TRANSISTOR AMPLIFIERS & OSCILLATORS: |
| | 2 | Practical circuit of transistor amplifier |
| | 3 | DC load line and DC equivalent circuit |
| | 4 | AC load line and AC equivalent circuit |
| | 5 | Calculation of gain |
| 10TH | 1 | Phase reversal/DOUBT CLEARING CLASS |
| | 2 | H-parameters of transistors |
| | 3 | Simplified H-parameters of transistors |
| | 4 | Generalised approximate model |
| | 5 | Analysis of CB, CE, CC amplifier using generalised approximate model |
| 11TH | 1 | R.C. coupled amplifier |
| | 2 | Transformer coupled amplifier |
| | 3 | Feed back in amplifier<br>General theory of feed back |
| | 4 | Negative feedback circuit<br>Advantage of negative feed back |
| | 5 | Power amplifier and its classification |
| 12TH | 1 | Difference between voltage amplifier and power amplifier |
| | 2 | Transformer coupled class A power amplifier |
| | 3 | Class A push – pull amplifier |
| | 4 | Class B push – pull amplifier |
| | 5 | Oscillators<br>Types of oscillators |
| 13TH | 1 | Principle of operation of tuned collector, |
| | 2 | Hartley, colpitt, phase shift, |
| | 3 | weinbridge oscillator (no mathematical derivations) |
| | 4 | FIELD EFFECT TRANSISTOR:<br>Classification of FET<br>Advantages of FET over BJT |

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| | 5 | Principle of operation of BJT |
| 14TH | 1 | FET parameters (no mathematical derivation) |
| | 2 | 7.4.2 AC drain resistance |
| | 3 | AC drain resistance<br>Trans-conductance |
| | 4 | Biasing of FET |
| | 5 | . OPERATIONAL AMPLIFIERS: |
| 15 | `1 | 8.2 Operational amplifier stages |
| | 2 | Equivalent circuit of operational amplifier |
| | 3 | Open loop OP-AMP configuration |
| | 4 | Inverting OP-AMP<br>OUBT CLEARING CLASS |
| | 5 | Non inverting OP-AMP<br>Voltage follower & buffer8.5 OPAMP with fed back |
| 16 | 1 | Differential amplifier<br>Adder or summing amplifier |
| | 2 | Sub tractor<br>Integrator |
| | 3 | DOUBT CLEARING CLASS |
| | 4 | 8.9.4 Differentiator |
| | 5 | DOUBT CLEARING CLASS |

SIGN.OF LECTURE

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