

**“PVCNSSK” GOVT. POLYTECHNIC BILASPUR at KALOL**  
**PLANNED THEORY SYLLABUS COVERAGE**

PTSC-7.1

<b>GPB</b>		<b>Department: Electrical Engg.</b>		<b>Subject: Electronics Devices and Circuits</b>		
		<b>Sem. &amp; Branch: 3<sup>rd</sup> &amp; Elect. Engg</b>		<b>Duration : 3years</b>		
<b>SYLLABUS COVERAGE</b>		<b>Total Periods: Theory:56 Practical:28</b>				
Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1	10(1-10)	<b>Semiconductor and Diodes</b>	Definition, Extrinsic/Intrinsic, N-type & p-type PN Junction Diode – Forward and Reverse Bias Characteristics Zener Diode – Principle, characteristics, construction, working Diode Rectifiers – Half Wave and Full Wave Filters – C, LC and PI Filters.			
2	10(11-20)	<b>Bipolar Junction Transistor (BJT)</b>	NPN and PNP Transistor – Operation and characteristics Common Base Configuration – characteristics and working Common Emitter Configuration – characteristics and working Common Base Configuration – characteristics and working High frequency model of BJT Classification of amplifiers, negative feedback.			
3	12(21-32)	<b>Field Effect Transistors FET</b>	Working Principle, Classification MOSFET Small Signal model N-Channel/ P-Channel MOSFETs – characteristics, enhancement and depletion mode, MOSFET as a Switch Common Source Amplifiers. Uni-Junction Transistor – equivalent circuit and operation			

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Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
4	14(33-46)	SCR DIAC & TRIAC	SCR – Construction, operation, working, characteristics DIAC - Construction, operation, working, characteristics TRIAC - Construction, operation, working, characteristics SCR and MOSFET as a Switch, DIAC as bidirectional switch Comparison of SCR, DIAC, TRIAC, MOSFET.			
5	10(47-56)	Amplifiers and Oscillators	Feedback Amplifiers – Properties of negative Feedback, impact of feedback on different parameters Basic Feedback Amplifier Topologies: Voltage Series, Voltage Shunt Current Series, Current Shunt Oscillator – Basic Principles, Crystal Oscillator, Non-linear/ Pulse Oscillator			

<b>APPROVED</b>	<b>SIGN HOD/OIC</b>
DATE -----	

18/8/23.