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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY::PUTTUR
(AUTONOMOUS)****M.Tech I year II Semester (R18) Regular Examinations June 2019
(For Students admitted in 2018 only)****Time: 3 hours****POWER ELECTRONIC CONVERTERS
(Power Electronics)****Max. Marks:60****(Answer all Five Units 5×12=60 Marks)****UNIT I**

- 1 a. Explain briefly about MOSFET and Draw the switching characteristics of MOSFET **6M**
 b. Explain about output and transfer characteristics of IGBTs **6M**

OR

- 2 a. What are the turn-off and turn-on characteristics of SCR **6M**
 b. What are the purpose of shunt snubber and series snubber in transistor **6M**

UNIT II

- 3 a. Explain the principle of operation of phase-controlled converter **6M**
 b. How does a 12 pulse converter works? and draw the circuit **6M**

OR

- 4 a. Draw the circuit arrangements of single-phase semi-converters and derive the output voltage of semi-converter **6M**
 b. State and explain different methods of control of converters **6M**

UNIT III

- 5 a. Explain the principle and operation of the step-up converter with RL-load **6M**
 b. Explain the principle and operation of the cuk converter **6M**

OR

- 6 Explain the principle and operation of the Buck-Boost converter **12M**

UNIT IV

- 7 a. Explain the principle and operation of the current source inverters **6M**
 b. Compare the modulation techniques used in inverters **6M**

OR

- 8 a. Evaluate the voltage control of Three-Phase inverters **6M**
 b. Draw and explain the waveforms for three-phase inverter when each transistor conducts for 120° **6M**

UNIT V

- 9 a. Explain the principle of the Three-Phase Inverter **6M**
 b. Explain the principle and operation of the parallel inverters **6M**

OR

- 10 a. Explain briefly about difference between voltage control and PWM technique **6M**
 b. Explain the Pulse width modulation techniques used in inverters. **6M**

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