

(3 Hours)

[Total marks: 80

- N.B.: (1) Question no.1 is compulsory
(2) Attempt any three questions from remaining.
(3) Figures to the right indicates full marks
(4) Assume suitable data if required. Justify the same

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| Q.1 | A) Compare power BJT with power MOSFET. | 5 |
| | B) Explain significance of Free Wheeling Diode. | 5 |
| | C) Explain significance of Heat Sink. | 5 |
| | D) What is basic principle of DC-DC Converter? | 5 |
| Q.2 | A) Explain different techniques for protection of SCR. | 10 |
| | B) What is cycloconverter? Explain its operation to reduce frequency to one third of input frequency. | 10 |
| Q.3 | A) With neat circuit diagram and waveforms 3-phase inverter with 180° mode of conduction. | 10 |
| | B) Explain 3-phase semi converter with R-load. | 10 |
| Q.4 | A) Explain Space vector Modulation in detail. | 10 |
| | B) What is commutation of SCR? Explain different techniques of Commutation. | 10 |
| Q.5 | A) Explain Boost converter. | 10 |
| | B) Explain PWM techniques used in Inverter. | 10 |
| Q.6 | Write short notes on: | 20 |
| | A) TRIAC | |
| | B) ON-OFF phase controller | |
