

SANT GADE BABA AMRAVATI UNIVERSITY, AMRAVATI
Summer Examination 2020
HVPM's College of Engineering and Technology, Amravati
Department of Electronics & Telecommunication Engineering
Bachelor of Engineering Sem. :- V

Subject :- Power Electronics

Code:- 5XT2/5XN2

Instruction :-

- 1) Solve any two questions
 - 2) All question carry equal marks
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Que 1.

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| a) Explain the characteristics of MOSFET. | 02 Credit Points |
| b) What do you mean by string efficiency & derating factor of SCR. | 02 Credit Points |
| c) Explain with proper circuit diagram three Phase half controlled bridge rectifier. | 02 Credit Points |
| d) Explain classification of circuit for forced commutations. | 02 Credit Points |
| e) Explain Jones chopper along with suitable applications. | 01 Credit Points |
| f) Explain with suitable diagram speed control of DC series motor using Chopper. | 01 Credit Points |

Que 2.

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|---|------------------|
| a) Explain construction and working of DIAC. | 02 Credit Points |
| b) What is series and parallel operation of SCR. | 02 Credit Points |
| c) Explain necessity and effect free wheeling diode. | 02 Credit Points |
| d) Explain necessity of harmonics reduction techniques and what are different harmonics reduction techniques. | 02 Credit Points |
| e) Explain basic principle of cycloconverter . | 01 Credit Points |
| f) Explain speed control of DC shunt motor using chopper. | 01 Credit Points |

Que 3.

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|---|------------------|
| a) Explain construction and working of SCR. | 02 Credit Points |
| b) What do you mean by static equalizing circuit for SCR . | 02 Credit Points |
| c) Explain with proper circuit diagram three phase fully controlled bridge rectifier. | 02 Credit Points |
| d) Explain concept of single phase transistorized bridge inverter. | 02 Credit Points |
| e) Explain with suitable diagram single phase to single phase cycloconverter . | 01 Credit Points |
| f) Explain with suitable diagram working of fan speed regulator. | 01 Credit Points |

Que 4.

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| a) Write a short note on two transistor analogy for turning ON of a SCR. | 02 Credit Points |
| b) What do you mean by dynamic equalizing circuit of SCR. | 02 Credit Points |
| c) Explain with suitable diagrams, concept of principle of Phase control. | 02 Credit Points |
| d) Explain principle of operation of three phase bridge inverter in 120° to 180° mode. | 02 Credit Points |
| e) Explain voltage commuted chopper circuit. | 01 Credit Points |
| f) Explain with suitable diagram working of static circuit breaker and its applications. | 01 Credit Points |