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**Question Paper Code: 57101**

B.E./B.Tech. DEGREE EXAMINATION, AUGUST 2021

Fifth Semester

Electrical Engineering

15UEE501 - POWER ELECTRONICS

(Regulation 2015)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

**(Answer any ten of the following questions)**

1. What is latching current of SCR? CO1- R
2. Why thyristor are not preferred for inverter? CO2- R
3. List the applications of uncontrolled rectifiers. CO3- R
4. Compare semi and full converter. CO4- R
5. Why is half wave AC voltage regulator not used? CO5- R
6. Distinguish between holding current and latching current of SCR. CO1- R
7. What are the advantages of PWM inverter? CO2- R
8. Justify the functions of filter in rectifier circuit. CO3- R
9. What is the inversion mode of rectifiers? CO4 -R
10. What do you mean by integral cycle control in AC voltage regulators? CO5- R
11. What is holding current of SCR? CO1- R
12. What are the advantages of PWM inverter? CO2- R
13. What is the use of LC filter? CO3- R
14. What is the inversion mode of rectifiers? CO4 -R
15. List out the applications of AC voltage regulator. CO5- R

PART – B (3 x10= 30 Marks)

**(Answer any three of the following questions)**

16. If a SCR and a MOSFET of same rating is available, which one will you prefer for building high frequency inverter circuit. Why? Also sketch and explain the switching characteristics and driver circuit of the chosen device.. CO1- Ana (10)
17. Explain in detail about the space vector Modulation with neat diagram CO2- U (10)
18. Examine the working of half wave voltage doublers with neat diagram. CO3- Ana (10)
19. Discuss the working of six pulse converter and draw the relevant waveforms. CO4- Ana (10)
20. Discuss the principle of phase control in single phase full wave ac voltage controller. Derive expression for the rms value of its output voltage. CO5- Ana (10)