KUMARAGURU
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Register Number: ……..…

M.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2013)

Third Semester

POWER ELECTRONICS AND DRIVES

P13PETE19: PWM Converters and Applications

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. Define the modulation index and write the rms value of output voltage in single Phase full bridge inverter?
2. What are the performance parameters of AC-DC converters?
3. What is Bus clamping PWM?
4. Draw the waveform for 60degree PWM.
5. What are the advantages of multilevel inverter?
6. What are the methods used for dead time compensation?
7. Mention the drawbacks of stator voltage control?
8. The power factor of semi converter is better than full converter. Why?
9. List the various sources of Reactive power?
10. What are the effects of harmonic current?

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

Q.No:11 is Compulsory

11. Explain the principle and implementation of SVPWM with algorithm.

12. Explain the operation of VSI fed three phase Induction motor drive.

13. (i) Draw and explain the operation of cascade type multi level inverter? (8)

(ii) Derive the expression for switching and conduction losses in power devices. (8)

14. Obtain the dynamic model of three phase PWM converter in α-β and d-q Coordinates.

15. Explain the various methods of power factor compensation in forced commutated converters and also derive the performance parameters.

16. (a) Explain the operation of STATCOM with neat diagram. (8)

(b) Explain active power filtering for harmonic compensation. (8)

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