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5th Sem. / Elect. / P.S. Engg. / Elect & Eltx. Engg.

Subject : Industrial Electronics and Control of Drives

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) What are number of PN junction in a Thyristor?

b) What is Heat Sink?

c) What is LASCR?

d) Draw the symbol for TRIAC.

e) Define Controlled rectifier.

f) In a three phase full wave half controlled converter, the thyristors are fired at an interval of _____.

g) What is full form of UJT.

h) Current source inverter is _____ of load.

i) What is a chopper?

j) What is class A chopper?

k) Define Cycloconverter.

l) Define Heat sink.

m) In a load acid cell, active material for +ve plate is _____.

n) What is an Online UPS?

o) What is Commutation.

p) Draw the symbol of SCR.

q) Voltage source inverter, allows a variable frequency supply to be obtained from a _____ source. (AC / DC).

r) Draw V-I characteristics of TRIAC.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) What is thyristor string? Define string efficiency.

ii) What are different methods of triggering?

iii) Explain the speed control of fax regulator using thyristor with the help of diagram.

iv) What is forced commutation & natural commutation?

v) Differentiate between ON-LINE UPS and OFF-LINE UPS.

vi) What are the indications of fully charged cell.

vii) Draw block diagram of electric drive. Explain.

viii) Write a short note on static control of drive.

ix) Explain the tyristor control of half wave dc drive.

x) What is the difference between voltage source and current source inverter?

xi) How choppers and classified on the basis of their operation in any of four quadrants?

xii) Draw the block diagram of an iverter and explain its working.

xiii) Draw the circuit diagram for three phase dual converter.

xiv) State few application in which controlled DC is required.

xv) Draw the circuit diagram of three phase half controlled bridge rectifies.

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 Draw and explain V-I characteristics of SCR.

Q.4 Draw the circuit diagram and explain working of single phase half wave controlled rectifier with resistive load.

Q.5 Draw the circuit diagram of single phase cycle converter and explain its working.

Q.6 Describe briefly the slip control of AC drives.

Q.7 What are important instructions necessary for the maintenance & care of Lead Acid cells?