xv) The circuit of single-phase ac voltage controller is the same as that used for single phase ac switch. Discuss how these two differ from each other.

SECTION-C

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

Q.3 Describe a single phase sinusoidal voltage controller.

Q.4 Describe the basic principle of single phase to single phase step up cycloconverter with the help of mid-point and bridge type configurations. Illustrate your answer with appropriate circuit and waveforms.

Q.5 Describe the stator frequency control technique for the speed control of 3 phase induction motor.

Q.6 Describe with appropriate voltage and current waveform, the working of a single phase full-converter fed dc drive.

Q.7 Write short notes on any two

a) Methods of reactive power compensation

b) Chopper drive

c) Three phase to single phase cycloconverter.

No. of Printed Pages : 4
Roll No. .....

125961/105961

6th Sem. / PE

Subject : Power Electronics - II

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 a) SMPS stands for _____.

b) Give one application of Dual converter.

c) What is chopper?

d) Define Switch.

e) Give one advantage of DC Drive System?

f) A single phase voltage controller using two SCRs in antiparallel is found to be operating as a controlled rectifier. This is because _____.

g) A 3- phase to 3- phase cycloconverter requires _____ SCRs for 6 pulse devices.

h) A separately excited dc motor is required to be controlled from a 3-phase source for operation in th first quadrant only. The most preferred converter would be _____.

i) A good method of achieving reactive power compensation is by using _____.

j) Step - down cycloconverter works on natural commutation. (True/False)

k) What is Half wave converter?

l) What do you understand by three phase supply?

m) Define Power factor.

n) What is DC circuit breaker?

o) A 3-phase induction motor operates at constant slip frequency while the stator frequency is varied from zero to rated value. The torque developed by the motor is constant in the complete range up to base speed.(True/False)

p) Give one disadvantage of AC voltage controller.

q) Name any two method of speed control of three phase induction motor through semiconductor devices.

r) Give the classification of dc drives.

SECTION-B

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

Q.2 i) Explain the concept of electric drive.

ii) What is an ac voltage controller? List some of its industrial applications.

iii) Draw the possible configuration of single-phase voltage controller.

iv) What are the advantages of multistage over two-stage sequence control?

v) Explain the basic principle of single phase to single phase step down cycloconverter.

vi) What is an UPS? Give its industrial applications.

vii) What is static switch? List the merits of static switches over mechanical switches?

viii) Describe single phase ac switches using bidirectional switches?

ix) What is four quadrant chopper drive?

x) What is single phase half-wave converter drive?

xi) Name the various methods of power factor improvement.

xii) Draw the circuit diagram of thyristor controlled reactor.

xiii) Briefly explain the use of synchronous condensers.

xiv) Give the industrial applications of SMPS.