Q.27 What do you mean by step up chopper ? Explain its working . (CO-03)

Q.28 How the speed reversal of a dc motor is achieved using dual converter ? (CO-03)

Q.29 Write a short note on cycloconverter. (CO-04)

Q.30 Explain working of single phase full wave controlled rectifier for the speed control of Dc motor . (CO-04)

Q.31 Draw and explain the circuit diagram of OFF line UPS. (CO-05)

Q.32 Write short note on Dual Converter. (CO-04)

Q.33 Illustrate the series operation of SCRs with help of diagram . (CO-01)

Q.34 Write the advantages of HVDC transmission . (CO-05)

Q.35 Define Dual Converter. Write down the advantages of Dual converter. (CO-04)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Draw and explain the V-I characteristics of SCR. (CO-01)

Q.37 Explain speed control of DC motor using chopper drive in detail. (CO-03)

Q.38 Write short note on any two :

a) Inverter drives. (CO-05)

b) Snubber circuit (CO-01)

c) DIAC (CO-04)

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Roll No. .....

5th Sem / Mechatronics

Subject:- Power Electronics

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 An SCR is made of ..... (CO-01)

a) Germanium b) Silicon

c) Carbon d) None of the above

Q.2 An SCR is a ..... triggered device . (CO-01)

a) Voltage b) Current

c) Both d) None

Q.3 To turn off the thyristor, the anode current (CO-01)

a) falls below the holding current

b) falls below the latching current

c) rises above the holding current

d) rises above the latching current

Q.4 Choppers are ..... converters . (CO-03)

a) DC to DC b) AC to DC

c) AC to AC d) DC to AC

Q.5 The values of duty cycle (a) lies between (CO-04)

a) $0<\alpha<1$ b) $0>\alpha>-1$

c) $0<=\alpha<=1$ d) $1<\alpha<100$

Q.6 A dual converter has ..... quadrant operations without any change over switch . (CO-04)

a) 4 b) 3
c) 2 d) None

Q.7 Cyclo-converters used in aircraft power supplies provide....frequency power from a ..... input frequency power . (CO-04)

a) fixed,variable b) variable, fixed
c) variable, variable d) fixed, fixed

Q.8 The output of SMPS is..... (CO-05)

a) pulsating DC b) voltage sweep
c) AC d) DC

Q.9 In Which of the following both frequency and voltage can be controlled ? (CO-04)

a) Inverter, cyclo-coverter and ac voltage controller
b) Cycloconverter and ac voltage controller
c) Inverter and cycloconverter
d) Inverter and ac voltage controller

Q.10 Which of the following is used to build an electric drive ? (CO-04)

a) Source b) Motor
c) Control unit d) All of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Draw the symbol of TRIAC. (CO-01)

Q.12 Expand LASCR (CO-01)

Q.13 Draw the symbol of UJT. (CO-01)

Q.14 Commutation is the process of .....the SCR. (CO-02)

Q.15 Define controlled rectifier. (CO-03)

Q.16 Explain FWD. (CO-02)

Q.17 Define the term string efficiency. (CO-02)

Q.18 DIAC is used to..... (CO-01)

Q.19 Define an electric drive. (CO-05)

Q.20 Type-A chopper is used for obtaining .....(motoring /regenerative) mode. (CO-04)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain the two transistor analogous operation of SCR. (CO-01)

Q.22 Explain the basic construction of UJT and explain its V-I characteristics. (CO-01)

Q.23 Explain the basic idea about the selection of heat sink. (CO-01)

Q.24 Explain the application of SCR for the speed control of universal motor. (CO-02)

Q.25 Explain load commutation method of SCR with circuit diagram. (CO-02)

Q.26 Explain the working of single phase full wave centre tap controlled rectifier. (CO-02)