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328813(28)

APR-MAY

B. E. (Eighth Semester) Examination, 2020

(Old Scheme)

(Et & T Branch)

INDUSTRIAL & POWER ELECTRONICS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

*Note : All questions are compulsory. Part (a) is compulsory and solve any **two** from parts (b), (c) and (d).*

Unit-I

1. (a) What is the Breakdown mechanism of Zener diode. 2

   (b) Explain three terminal voltage regulator using LM-340IC.

(c) Explain basic transistorized shunt voltage Regulator and how its performance can be improved? 7

(d) Write short notes on : (any **one**) 7

    (i) SMPS

    (ii) Dual Tracking Regulator

Unit-II

2. (a) Justify the statement "Higher is the gate current, lower is the fwd breakover voltage". 2

(b) Give the comparison between any three thyristor family members. 7

(c) What is the basic difference between load commutation and external pulse commutation? 7

(d) Write short notes on :

    (i) Different methods of triggering SCR circuits 4

    (ii) SCR's operation - series & parallel operation 3

Unit-III

3. (a) What do you mean by Chopper & write used. 2

(b) Explain the working principle of three phase converter. 7

(c) Explain the single mid-point cycloconverter with the help of circuit. 7

(d) Describe McMurray bridge inverter in brief. 7

Unit-IV

4. (a) Define skin effect in Induction Heating. 2

(b) Explain different types of Resistance Welding. 7

(c) Write the limitations, theory and effect of variation of supply voltage & frequency of "dielectric heating" with two application. 7

(d) For the high frequency induction heating derive the total power entering the metal per sq. cm. of the surface given by : 7

$$P_t = \frac{8\pi H_0 \sqrt{10^{-9}\mu_r f}}{\sqrt{\sigma}}$$

Unit-V

5. (a) Explain origin of noise.   2

   (b) Briefly with the help of B.D. of operation of ONLINE UPS and OFFLINE UPS.   7

   (c) What are the different types of noise? Explain any three in brief.   7

   (d) Write short notes on : (any **one**)   7

       (i) Servo Motor of servo system
       (ii) Buck-Boost control voltage stabilizer