

Con. 3593-10.

(REVISED COURSE)

AN-3409

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Answer any **four** questions from remaining **six** questions.
 (3) **Figures** to the **right** indicate **full** marks.

1. Attempt any **four** of the following :- (20)
 - (a) Explain the application of Op-Amp as an Integrator.
 - (b) Explain the meaning of following instructions in case of 8085 microprocessor.
 - (i) STA addr. (ii) MVI A, 01
 - (c) Compare single phase and three phase transformer.
 - (d) State the application of DC motor.
 - (e) Describe the function of relay.
 2. (a) Describe with neat sketch the working of IC 555 as a timer. (10)
 (b) Explain the working and application of Multiplexer and De-multiplexer. (10)
 3. (a) Enumerate the different types of three phase induction motor and describe the construction and working of any one. (13)
 (b) Describe the working of Resistance Welding scheme. (07)
 4. (a) A DC shunt motor drives a centrifugal pump whose torque varies as the square of the speed. The motor is fed from a 200 V supply and takes 50 A when running at 1000 r.p.m. What resistance must be inserted in the armature circuit in order to reduce the speed to 800 r.p.m.? The armature and field resistance of the motor are 0.1Ω and 100Ω respectively. (10)
 (b) State the essential features of an Op-Amp and then describe the working of Op-Amp as an inverting amplifier. (10)
 5. (a) Draw and explain the architecture of 8085 microprocessor. (10)
 (b) Explain open and short circuit test for transformer and state the reason for conducting these tests. (10)
 6. (a) Explain the thyristor controlled speed control of DC series motor. (10)
 (b) Explain microprocessor based speed control of motor. (10)
 7. Write short notes (any three). (20)
 - (a) Stepper motor.
 - (b) DC shunt motor starters.
 - (c) Interrupts in microprocessor 8085.
 - (d) Linear and Digital IC's.
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