

Con. 10280-13.**LJ-10595**

(3 Hours)

[Total Marks : 100

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

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| 1. Any four :- | 20 |
| (a) Explain SCR as a rectifier and give significance of free-wheeling diode. | |
| (b) What are the open loop configurations of OPAMP? Explain any one with circuit diagram. | |
| (c) What are the advantages of electronic control of a motor? | |
| (d) What do you mean by cycloconverter? Explain reasons of limited applications of cycloconverters. | |
| (e) A SCR circuit has 20 A load current 400 V d.c. voltage and 190 μ s turn off time of the device. Determine the value of the commutating capacitor. | |
| 2. (a) Explain construction, working and applications of TRIAC. | 10 |
| (b) Explain with the help of block diagrams armature and field control of a d.c. shunt motor. | 10 |
| 3. (a) What do you mean by commutation of SCR? Classify and explain all commutation circuits of SCR. | 10 |
| (b) Explain in detail working of a dual converter circuit. | 10 |
| 4. (a) Discuss in detail the overload protection of d.c. motor. | 10 |
| (b) Explain improved series inverter circuit. | 10 |
| 5. (a) Explain 555 timer as monostable multivibrator with waveforms. | 10 |
| (b) Derive the expression for OPAMP as an integrator. | 10 |
| 6. (a) Realize all basic gates with NOR gate. | 10 |
| (b) What are the advantages of digital systems? Compare different digital expression reduction techniques and explain the effective method. | 10 |
| 7. (a) Discuss architecture of 8085 microprocessor. | 10 |
| (b) Explain in detail interrupts of 8085 microprocessor. | 10 |
