303 Register No.: [ ]

October 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. Draw the symbol of: (i)IGBT (ii)MOSFET.
2. Mention the advantages of pulse transformer used in trigger circuit.
3. Define converter and state its uses.
4. What is meant by chopper?
5. Define inverters and mention its uses.
6. What are the parts of PLC?
7. What is DCS?
8. Compare PLC circuit with relay circuit.

PART – B

9. Compare power MOSFET and power IGBT
10. Define triggering of SCR and state the requirements of gate triggering circuit.
11. List the types of forced commutation.
12. State any three applications of SMPS.
13. What are the programming languages used in PLC?
14. How the PLC can be interfaced with GSM?
15. State the advantages of DCS.
16. Explain the operation of centralized controller.

PART – C

17. (a) Explain the operation of GTO with a neat diagram. State its advantages and disadvantages over thyristor.

(Or)

(b) Explain the working principle of synchronized UJT triggering circuit with a neat diagram.

18. (a) Explain the working principle of single phase fully controlled bridge converter with R and RL loads with a neat diagram.

(Or)

(b) Explain the operation of AC chopper with a neat diagram.

19. (a) Explain the various methods to obtain sine wave output from an inverter.

(Or)

(b) Explain the two types of UPS with block diagram.

20. (a) Explain the arithmetic functions and comparison functions used in PLC.

(Or)

(b) Explain various input and output modules used in PLC.

21. (a) Draw and explain the architecture of DCS.

(Or)

(b) With the diagram, explain the different operator displays.
