854 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. Define amplitude.
2. What is meant by UPS?
3. What is efficiency of transformer?
4. What is meant by earthing?
5. State the applications of diode.
6. Define redundant groups.
7. Define edge triggered flip flop.
8. Define Avalanche breakdown.

PART – B

9. What is meant by phase difference?
10. Define servomotor.
11. Draw and explain the illumination characteristics of LED.
12. Convert the decimal number 859 to its equivalent binary, octal and hexa decimal numbers.
13. Explain half subtractor.
14. Explain SR flip-flop.
15. Explain toggling in flip-flops.
16. State the indications of fully charged cell.

[Turn over.....

PART – C

17. (a) Explain the constructional details of lead acid battery.

(Or)

(b) (i) Explain the specifications and ratings of UPS.
(ii) Explain the maintenance of UPS.

18. (a) (i) Explain the working principle of transformer.
(ii) Explain the construction of transformer.

(Or)

(b) (i) What are the factors to be considered for selecting a motor for a particular application.
(ii) What are the precautions should be taken against electric shock.

19. (a) (i) With the diagram, explain the operation of LDR.
(ii) With the diagram, explain transistor as a switch.

(Or)

(b) Explain the operation of bridge rectifier with a neat diagram and waveforms.

20. (a) (i) Construct EXOR logic gate by using only NOR gates.
(ii) Construct AND and OR logic gates by using only NAND gates.

(Or)

(b) (i) State and prove De-Morgan's theorem.
(ii) Draw the logic diagram of demultiplexer and explain it.

21. (a) (i) Explain the operation of JKMS flip-flop with a neat diagram.
(ii) With the logic diagram, explain the operation of serial in-parallel out shift register.

(Or)

(b) Explain the operation of a decade counter with the logic diagram, waveforms and truth table.
