Register No.:

317

October 2017

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 semiconductor.
2. Draw the circuit symbol for NPN and PNP transistor.
3. Define amplifier.
4. Draw the integrator circuit using Op. Amp.
5. Draw the half adder circuit.
6. Define the function of reset pin in 8051.
7. What are the various modes of 8255 IC?
8. Convert the following: (i) $(24)_{10} = (?)_2$ (ii) $(101)_2 = (?)_{10}$

PART – B

9. Define PN junction diode.
10. What are the types of transistor configuration? Define CB configuration.
11. Draw the emitter follower circuit and list out its applications.
12. Define the function of differentiator using Op. Amp.
13. Explain the operation of SR flip flop using truth table.
14. What are the various addressing modes of 8051? Define direct addressing.
15. Draw the pin diagram of 8255 IC.
16. Draw the full adder circuit.

[Turn over.....

PART – C

17. (a) Explain the forward and reverse bias characteristics of PN junction diode.

(Or)

(b) Explain how transistor acts as an amplifier in detail.

18. (a) Explain the effects of negative feedback in detail.

(Or)

(b) Explain the characteristics of an operational amplifier in detail.

19. (a) Convert the following:

(i) $(25)_{10} = (?)_2$ (ii) $(111)_2 = (?)_{10}$

(iii) $(2A)_{16} = (?)_{10}$ (iv) $(126)_{10} = (?)_{16}$

(Or)

(b) Explain in detail about RS, D and T flip flops.

20. (a) Draw the pin diagram of 8051 and explain in detail.

(Or)

(b) Explain in detail about the memory organization of 8051.

21. (a) Draw the pin diagram of 8255 IC and explain.

(Or)

(b) Explain about relay interfacing with 8051.
