

April 2019

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 CE configuration circuit.
3. Classify the amplifiers based on the function and frequency.
4. Draw the circuit of integrator using op-amp.
5. Draw the logic diagram of half-adder.
6. What are the applications of decade counter?
7. What is the function of ALU?
8. List the modes of 8255 IC.

PART - B

9. Define and draw the circuit of self bias.
10. Define and draw the general form of LC oscillator.
11. Draw the logic diagram and truth table of JK flip flop.
12. Draw the logic diagram and truth table of two input AND gate and OR gate.
13. Define stack.
14. Define and list the hardware interrupts.
15. Define basic input/output mode of 8255.
16. Convert the following into decimal. (i) $(1101)_2$, (ii) $(6A)_{16}$, (iii) $(32)_8$.

[Turn over....

PART - C

17. (a) Explain in detail about forward bias characteristic of PN junction diode.
(Or)
(b) Explain in detail about CB configuration with a circuit.
18. (a) Draw the circuit of RC coupled amplifier and explain.
(Or)
(b) Explain in detail about Hartley oscillator.
19. (a) Draw the logic diagram of full adder and explain with truth table.
(Or)
(b) Draw the logic diagram of 4 bit asynchronous counter and explain.
20. (a) Draw the block diagram of 8051 microcontroller and explain.
(Or)
(b) List out various addressing modes and explain.
21. (a) Draw the block diagram of 8255 IC and explain.
(Or)
(b) Explain in detail about sensor interfacing.
