

QUESTION BANK FOR II SEM

Short Answer/ MCQ

1. For the operation of N-channel enhancement MOSFET, value of gate voltage has to be
(a) High positive (b) high negative (c) low positive (d) zero
2. The extremely high input impedance of a MOSFET is primarily due to the
(a) Absence of its channel (b) negative gate-source voltage (c) depletion of current carriers (d) extremely small leakage current of its gate capacitor
3. In a DE MOSFET, drain current flows when gate voltage is
(a) positive (b) negative (c) all the above (d) zero
4. The positive-gate operation of an N-channel DE MOSFET is known as-----mode (a) depletion (b) enhancement (c) E-only (d) normal
5. In an E-only MOSFET, drain current starts only when $V_{gs(th)}$ is
(a) positive (b) negative (c) greater than $V_{gs(th)}$ (d) zero
6. Which semiconductor device acts like a diode and two resistors (a) SCR (b) triac (c) diac (d) UJT
7. A UJT has $R_{BB}=10K\Omega$ and $R_{B2}=10K\Omega$. Its intrinsic stand-off ratio is (a) 0.6 (b) 0.4 (c) 2.5 (d) 1.5
8. An SCR conducts appreciable current when its ----- with respect to cathode. (a) anode and gate are both negative (b) anode and gate are both positive (c) anode is positive and gate is negative (d) gate is negative and anode is positive.
9. An SCR has (a) 4 layers and 3 terminals (b) 3 layers and 4 terminals (c) 2 anodes and 2 gates (d) one anode one cathode and two gates.
10. An SCR may be switched On by a (a) positive pulse at its anode (b) negative pulse at its cathode (c) positive pulse at its cathode gate (d) positive pulse at its anode gate.

Essay type questions

1. Describe the construction and explain the operation of depletion MOSFET. Also draw the static characteristics.
2. Describe the construction and explain the operation of N-channel enhancement MOSFET. Also draw the static characteristics.
3. Describe briefly the construction, working and characteristics of SCR
4. Explain the construction and working of a triac.
5. Explain the construction and working of a triac.

6. Explain the V-I characteristic of UJT. Why it is called a current controlled negative resistance device?
7. Explain the construction and working of a tunnel diode.
8. Explain the construction and working of a photodiode.
9. What is a varactor diode? Explain briefly, how it can be used in tuning circuits.
10. Briefly explain the PIN diode operation. Give its applications.

QUESTION BANK FOR IV SEM

1. Explain interlaced scanning method.
2. With the help of neat diagram, explain Videocon TV camera tube.
3. Explain briefly the difference between chrominance and luminance.
4. Why are television standards required? What are the major U.S TV standards?
5. Draw the block diagram of a monochrome TV transmitter and briefly explain the function of each block.
6. Draw the block diagram of a monochrome TV receiver and briefly explain the function of each block.
7. Draw the basic block diagram of a color TV transmitter and briefly explain the function of each block.
8. Draw the basic block diagram of a color TV receiver and briefly explain the function of each block.
9. Explain what is meant by the Y, I and Q signals in color TV, and why they are generated.
10. Explain how the tube may be used as a matrix for the R, G and B voltages.
11. Draw the composite video signal and briefly explain it.
12. Explain how a color picture tube is able to display white.
13. Why is scanning necessary in TV transmission? Why is it carried out at a fast rate?
14. What is the basic principle of operation of a television camera tube?

15. Describe the basic principle of color television transmission and reception.
16. Why are synchronizing pulses transmitted along with the picture signal?
17. What do you understand by interlaced scanning? Show that it reduces flicker and conserve bandwidth.
18. What is vestigial sideband transmission and why is it used for transmission of TV picture signals?
19. Explain the basic principle of color TV system.
20. Write a comparison between American and European systems.
21. Why and how is the color burst transmitted?
22. With the aid of the circuit diagram of a simple matrix, show how the I, Q and Y signals are generated in a color TV transmitter show typical values for the Y and I components on your matrix.

QUESTION BANK FOR VI SEM

1. What are the advantages and dis advantages of programming in C?
2. What are the factors which affect the delay program?
3. Differentiate between the sbit and bit data type.
4. Explain the usage of while (1) statement in a C program.
5. What is the meaning of the word 'code' used in C programs?
6. What is the drawback of using ROM code space for data?
7. Differentiate between unsigned char and signed char.
8. With the help of block diagram explain the interfacing of ADC with the 8051 microcontroller.
9. With the help of block diagram explain the interfacing of DACwith the 8051 microcontroller.
10. With the help of block diagram explain the interfacing of stepper motor with the 8051 microcontroller.
11. With the help of block diagram explain the interfacing of seven segment display with the 8051 microcontroller.
12. With the help of block diagram explain the interfacing of keyboard with the 8051 microcontroller.
13. With the help of block diagram explain the interfacing of traffic light controller with the 8051 microcontroller.
14. With the help of block diagram explain the interfacing of LCD with the PIC 16F877A.
15. Write a C program to interface a ADC with the 8051 microcontroller.
16. Write a C program to interface a stepper motor with the 8051 microcontroller.
17. Write a C program to interface a DAC with the 8051 microcontroller.
18. Write a C program to interface a seven segment with the 8051 microcontroller.
19. Write a C program to interface a keyboard with the 8051 microcontroller.

20. Write a C program to interface a traffic light controller circuit with the 8051 microcontroller.
21. Explain briefly the concept of programming the external hardware interrupts.
22. Explain the basic interfacing concept.
23. Explain the basic interfacing concept of interrupts.
24. Write the key features of PIC microcontroller.
25. Write the features of PIC 16F877A.
26. Interface a DAC 0808 to 8051 at port P1 and write an 8051 C program to generate a sawtooth waveform.
27. Interface a DAC 0808 to 8051 at port P1 and write an 8051 C program to generate a triangular waveform.
28. Interface a DAC 0808 to 8051 at port P1 and write an 8051 program to generate a 1K Hz squarewave of 50HZ duty cycle.