ANEKANT EDUCATION SOCIETY'S

Tuljaram Chaturchand College of Arts, Science and Commerce , Baramati

(Autonomous)

Class : F.Y.B.Sc (Computer Science)
Department : ELECTRONICs
Subject : (CSEL1201) Semiconductor Devices and Memories
Paper : I

QUESTION BANK (2019-20)

Short Answer (1 mark)

1. What is rectifier?
2. Draw circuit symbol of opto-coupler.
3. Draw circuit symbol of varactor diode.
4. Define doping.
5. Draw symbol for PN junction diode.
6. Draw symbol for LED diode.
7. Draw symbol for zener diode.
8. Write various types of PLDs.
9. State various materials used for fabrication of LED
10. Draw symbol for Photo diode.
11. Define Ripple factor.
12. What do you mean by PIV?
13. Draw structure of PAL.
14. What do you mean by transistor?
15. What is bipolar and unipolar?
16. What are different types of ROM.
17. What is biasing.
18. Define FET
19. Define Channel in FET.
20. Why FET is voltage controlled device?
21. Draw symbol of N channel FET and P channel FET.
22. What do you mean by transconductance?
23. Define amplification factor.

24. What is MOSFET.

25. What is static RAM.

26. What is amplifier.

27. Which memory must be refreshed many times per second?

28. What are the different applications of PLD.

29. What are different advantages of ROM as PLD.

30. Define amplification factor, Trans-conductance and dynamic drain resistance.

Short Answer (2 marks)

1. Give circuit symbols of photodiode & varactor diode.

2. What are different applications of JFET?

3. What are different types of memories?

4. Give circuit symbols of LED & Zener diode.

5. Ic=20mA & IB=40uA. find α and β?

6. State applications of transistor.

7. What is Zener? Draw its I-V characteristics.

8. If IC=10mA, IB=50uA then calculate IE?

9. Sketch I-V characteristics of forward biased and reverse biased diode.

10. What are operating regions of transistor?

11. What are different configuration methods of transistor?

12. Define rectifier. State types of rectifiers.

13. What is optocoupler?

14. What do you mean by doping? Which type of semiconductors are fabricated by doping?

15. Define knee voltage.

16. Define breakdown voltage.

17. What are different applications of power supply.

18. Draw symbol of PNP and NPN transistor.

19. What is difference between RAM and ROM?

20. What is need of PLD?

Long Answer (4 Marks)

1. Explain working principle of LED and state its two applications.

2. Differentiate between SRAM and DRAM.

3. What is zener diode? Draw it's characteristics. Also draw its circuit symbol.

4. What is photodiode? How it works? Draw its I-V characteristics.

5. Compare zener breakdown and avalanche breakdown.

6. What is photodiode? Explain its working principle. Give its one application.

7. What is an opto coupler. Explain its working?

8. Explain working of half wave rectifier. Draw input output waveforms.

9. Explain full wave rectifier with input output waveforms.

10. Explain the working of UJT.

11. Draw and explain block diagram of power supply.

12. Draw neat circuit diagram of full wave rectifier and explain its working with input and output waveforms.

13. Explain zener breakdown mechanism in brief.

14. Explain how transistor can be used as amplifier.

15. Design BCD to Excess 3 code converter and implement it using a suitable PLA.

16. Explain avalanche breakdown mechanism in brief.

17. Explain action of PN junction diode in forward bias and reverse bias.

18. Explain construction and working of NPN transistor.

19. Explain CE configuration of transistor.

20. Give relation between IC, IB and β.

21. Discuss the concept of Q point for CE configuration.

22. Write a note on CPLD.

23. Write a note on FPGA.

24. Explain how transistor can be used as switch.

25. How FET works as VVR.

26. Explain single stage RC coupled CE amplifier.

27. Explain construction and working of N channel JFET.

28. State the difference between FET and BJT.

29. Draw combinational circuit for PLA with three input, three product terms and two outputs.

30. Compare PLA and PAL

Long Answer (6 Marks)

1. What is Zener diode? Explain construction & working of it.

2. Draw circuit symbol of rectifying diode and explain working of it. Sketch I-V characteristics of forward biased and reverse biased diode

3. What is zener diode? Draw circuit symbol of zener diode. Explain working of regulator using zener diode.

4. What is MOSFET? How many types of MOSFET are vailable? Explain the action of MOSFET each type.

5. What do you mean by PLD? With neat labelled diagram explain FPGA in detail.

6. What is LED? Explain working principle of LED. State applications of LED.

7. Describe action of PN junction diode with its IV characteristics.

8. Draw and explain input and output characteristics of NPN transistor.

9. Compare between CB, CE and CC configurations

10. Discuss class A, class B and class C amplifier.

11. Explain how transistor work as switch and amplifier.

12. Explain construction and working of N channel JFET with its output characteristics.

13. Describe D-MOSFET with its characteristics.

14. Describe E-MOSFET with its characteristics.

15. Differentiate between BJT and EMOSFET

16. Explain construction and working of UJT with its characteristics.

17. What is power supply? State different stages in block diagram of power supply and explain function of each block.

18. Draw circuit symbol of rectifying diode and explain working of it. Sketch I-V characteristics of forward biased and reverse biased diode

19. Draw circuit diagram of Bridge rectifier .Explain its working with the input and output waveforms.

20. What is PLD? With neat labelled block diagram explain CPLD in detail.

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