

B.E. DEGREE EXAMINATIONS: APRIL /MAY 2009

Third Semester

ELECTRICAL AND ELECTRONICS ENGINEERING**U07EE304 Electronic Devices****Time: Three Hours****Maximum Marks: 100****Answer ALL the Questions:-****PART A (20 × 1 = 20 Marks)**

1. The Energy levels of orbiting electrons are measured in _____.
A. Voltage B. Electrons C. Electron Volts D. Fermi Level.
2. _____ is an Trivalent impurity.
A. Antimony B. Arsenic C. Aluminium D. Phosphor.
3. The barrier voltage for Ge junction is _____.
A. 0.7 B. 0.23 C. 0.32 D. 0.3
4. The maximum reverse voltage of a Diode is called as _____.
A. Forward voltage B. AC Blocking voltage
C. DC Blocking voltage D. Reverse voltage.
5. The time between the application of Input pulse and commencement of collector current is termed _____.
A. Delay Time B. Dead Time C. Rise Time D. Fall Time.
6. The unwanted randomly varying voltage with respect to temperature is called as _____.
A. Noise B. Thermal resistance C. Reverse voltage D. Thermal noise.
7. The Power gain of amplifier is _____.
A. $20 \log_{10} P_0/P_1$ B. $10 \log_{10} V_0/V_1$ C. $10 \log_{10} P_0/P_1$ D. $10 \log_{10} P_1/P_0$
8. The phase shift offered by CB transistor configuration is _____.
A. 90 degree B. 180 degree C. 0 degree D. 360 degree.
9. The region of characteristic of JFET where I_D is constant is called _____.
A. ohmic region B. Pinch-off region
C. Transfer region D. Breakdown region.
10. The Forward transfer admittance of JFET is also known as _____.
A. Transconductance B. Transresistance
C. Transvoltage D. Admittance.

11. The input impedance of FET is _____.
- A.Low B.Average C.High D.Medium.
12. In Enhancement MOSFET, the drain current is controlled by _____.
- A. V_{ds} B. V_{gs} C. V_{cs} D. V_{cc}
13. The light intensity at a distance of 2m from a 10 mcd source is _____.
- A.1 mlx B.10 mlx C.2.3 mlx D.2.5 mlx.
14. GaP material emits _____.
- A.IR radiation B.red-blue emission C.red or green emission D.yellow emission
15. An optocoupler is a combination of _____ and _____ in one package.
- A.Phototransistor,LED B.LED,LCD
C.Phototransistor,photodiode D.photodiode,solarcell.
16. _____ is called as a Tuning diode.
- A.Optocoupler B.Photodiode C.Varactor diode D.LDR.
17. _____ current controls the triggering of SCR.
- A.Anode current B.Gate current C.Source current D.cathode current.
18. _____ is an SCR type device used to stimulate a UJT.
- A.SUS B.PUT C.Phototransistor D.SCT.
19. _____ is a two terminal negative resistance device.
- A.UJT B.Tunnel diode C.SCR D.FET.
20. _____ is a bidirectional voltage control device.
- A.SCR B.TRIAC C.SUS D.SCS.

PART B (5 x 16 = 80 Marks)

21.a. With a neat sketch, explain the Transition and Diffusion capacitance of Pn diode. (16)

(OR)

21.b. Describe in detail Diode Switching Characteristics. (16)

22.a. Explain the construction and working principle of CE transistor configuration with the corresponding characteristic curve. (16)

(OR)

22.b. Explain the switching characteristics of Transistor. (16)

- 23.a.i. Define Intrinsic stand-off ratio. (2)
- ii. Explain how UJT acts as a Relaxation oscillator with a neat diagram. (14)

(OR)

- 23.b.i. Differentiate between JFET and MOSFET. (4)
- ii. Describe the characteristics of Depletion-Enhancement MOSFET with a neat diagram. (12)

- 24.a. Write short notes on: 1.LED (16)
2. Photodiode
3. Phototransistor
4. Laser diode

(OR)

- b. Explain the construction and working of LCD crystal. (16)

- 25.a.i. Explain the operation and characteristic of SCR. (8)
- ii. How SCR can be used as a 90 degree phase control circuit? (8)

(OR)

- b.i. Explain the Piezo-electric devices. (8)
- ii. Design a 5v voltage regulator circuit using Zener diode and explain its operation. (8)

(16)

(16)

(16)

(16)