



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 199129

Roll No.

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B. Tech.

(SEM. I) (ODD SEM.) THEORY
EXAMINATION, 2014-15
ELECTRONICS ENGINEERING

Time : 3 Hours]

[Total Marks : 100

1 Attempt any four parts : 5×4=20

- a) Explain the V-I characteristics of PN-junction diode.
- b) How zener diode acts as voltage regulator? Explain with suitable circuit.
- c) Elucidate the operation of half wave rectifier in detail and derive the expression for ripple factor.
- d) Draw a simple clipping circuit with suitable waveform and Explain types of clippers.
- e) Illustrate how LCD is differs from LED.
- f) Explain with suitable circuit that how diode acts as a voltage multiplier?

2 Attempt any two parts : 10×2=20

- a) Explain the operation of common collector configuration with suitable characteristics in detail.
- b) Describe the VI characteristics of JFET with different operating regions in detail.
- c) Explain the operation of voltage divider bias circuit and write down the approximate Equations of V_B , I_E , I_C and V_{CE} .

3 Attempt any two parts : $10 \times 2 = 20$

- a) Analyse the differential amplifier with suitable circuit in two modes of operation.
- b) Show that how input voltage is gets reversed using operational amplifier. And also derive the expression for voltage gain using inverting amplifier.
- c) Describe in detail account on Integrator and Differentiator with suitable circuit.

4 Attempt any two parts : $10 \times 2 = 20$

- a) Explain the functioning of a ramp type digital voltmeter.
- b) Enumerate with a block diagram of various elements involved in Digital Multimeter to measure the various range of Voltage and Current.
- c) Describe the construction and working of internal structure of CRT display.

5 Attempt any two parts : $10 \times 2 = 20$

- a) Explain the functional elements of communication system in detail.
- b) Define modulation. What is the need for modulation?
- c)
 - i) A 400 watt carrier is modulated to a depth of 75 percent. Calculate the total power in the modulated wave.
 - ii) The tuned circuit of the oscillator in a simple AM transmitter employs a $50 \mu\text{H}$ coil and 1-nF capacitor. If the oscillator output is modulated by audio frequencies up to 10 kHz , what is the frequency range occupied by the sidebands?