

( 2 )

- (c) Explain tunnel diode, LED, photodiode and IR LED. 7
3. (a) What is need of a rectifier ? 2
- (b) Explain ripple factor, PIV and TUF of diode. 5
- (c) Explain bridge and centre tapped FWR. 7
4. (a) State the transistor parameters. 2
- (b) Derive relation between  $\alpha$ ,  $\beta$  and  $\gamma$ . 5
- (c) Explain transistor configurations in CE and CC mode with their input and output characteristics. 7
5. (a) Define regulated power supply. 2
- (b) Explain 78 XX, 79XX and LM 317 IC regulator. 5
- (c) Define Bel, Decibel and Bandwidth. Explain single stage CE amplifier with voltage divider bias. 7

( 3 )

6. (a) Define Oscillator. 2
- (b) Define voltage and power amplifier with their applications. 5
- (c) Explain block diagram of CRO. 7
7. (a) Define Transducer. 2
- (b) Explain working of multimeter and make a comparison between digital and analog multimeter. 5
- (c) Discuss amplitude modulation and frequency modulation with reference to the signal, carrier wave and modulated wave. 7