2007-COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

B.TECH DEGREE EXAMINATION

ELECTRONIC DEVICES & CIRCUITS

(ELECTRICAL AND ELECTRONICS ENGINEERING)

TIME-3HOUR
MARKS-60

ANSWER ALL QUESTIONS

SECTION A [4*5=20]

1. Explain the dc power supply with block diagram.

2. Explain the principle & operation of Photodiode, PIN diode& Phototransistor.

3. Explain the pulse characteristics.

4. Explain the positive& negative clippers with neat ckt diagram.

SECTION B [4*10=40]

5. a) Explain voltage multipliers.

b) An ac supply of 230 v is applied to a half wave rectifier ckt through a T/F of turns ratio 10:1 .Determine
1. Im,Idc&Irms

2. dc power o/p.

3. ac power o/p.

4. efficiency of rectification.

5. dc o/p voltage.

6. Peak inverse voltage
Assume that the crystal diode has a forward resistance of 20 ohm& the load resistance is 1 Kilo ohm

6. a) Explain the working of T/F as a switch.

b) A bridge rectifier is supplying a load of 200mA at 30V. It uses a pi-section filter with a choke of 0.5 H & 2 capacitors each of 80 microF. Assume the supply frequency of 50 Hz. Find

(i)the i/p rms voltage of the secondary of the T/F.

(ii) the percentage ripple in o/p.

7. a) Explain the Breeder resistor& voltage regulation.

b) Explain astable, monostable& bistable multivibrators using BJT's.

8. a) Explain zener& avalanche diode.

b) A full wave rectifier has a peak o/p voltage of 25 V at 50Hz.& feeds a resistive load of 1Kohm. The filter used is shunt capacitor one with C=20 microfarad. Determine (i) dc load current(ii) dc o/p voltage(iii) ripple voltage(iv) ripple factor.