



B.E. / B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, APR / MAY 2014
GEOINFORMATICS
SECOND SEMESTER – (REGULATIONS 2008)
EC 9168 BASIC ELECTRONICS ENGINEERING

Time: 3 hr

Max. Marks: 100

Answer ALL Questions

Part – A

(10 x 2 = 20 Marks)

1. Mention two n-type and two p-type impurities.
2. Draw the V-I characteristic of a zener diode.
3. A transistor circuit in the active region has a base current of $20 \mu\text{A}$. Calculate the collector current if $\beta = 150$.
4. Calculate the gain with negative feedback given the amplifier gain without feedback as 100 and the feedback factor, $\beta = 0.1$.
5. Draw the symbols of n-channel JFET and SCR.
6. Draw the V-I characteristic of a SCR.
7. What are the conditions on loop gain and phase shift for oscillations to exist?
8. Calculate the frequency of oscillations in a Colpitts oscillator given the inductance values as $15 \mu\text{H}$ and capacitance as 909pF .
9. Write the truth table of an EX-OR gate.
10. What is an encoder?

(PTO)

Part – B

(5 x 16=80 Marks)

11. (i) Draw the V-I characteristic of UJT and explain any one application using UJT. (8)
(ii) Explain any one application of SCR with a neat circuit. (8)

12(a). Explain the working of a pn diode full-wave rectifier.

OR

12(b). Explain the application of zener diode as voltage regulator.

13(a). Explain the method of fixing the Q-point in a CE amplifier.

OR

13(b). Discuss the effect of negative feedback on voltage gain, input impedance, output impedance and bandwidth of an amplifier.

14(a). Explain the working of RC phase shift oscillator circuit.

OR

14(b). Draw the circuit of a non-inverting amplifier using op-amp and derive an expression for the voltage gain.

15(a). Write short notes on (i) full-adder (ii) Decoder (iii) Multiplexer (ii) Types of Flip flops.

OR

15(b). Explain the working of a successive approximation ADC.

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