10/01/18 (M)

Shaheed Bhagat Singh State Technical Campus, Ferozepur

Roll No:.....
Total no. of Questions: 06
Time: 03 hours

Total no. of pages: 01
M.M:60

B.Tech ECE 4th Sem
Pulse Wave Shaping and Switching
Subject Code: BTEC-405(Paper ID: N (RP)

Note: All questions are compulsory. 2011-14 batch

Section A (10x2marks =20)

1. Write answers to the point

a) Differentiate between active and passive elements.
b) Define form factor and Peak factor of an alternating quantity.
c) Explain the role of commutating capacitors in a bistable circuit.
d) What is an avalanche breakdown?
e) Draw the phasor diagram and voltage triangle of RL circuit.
f) What are Linear wave shaping circuits?
g) When does a high pass filter circuit acts as a differentiator?
h) Draw the circuit of a negative clamper.
i) What is an attenuator?
j) How the Schottky diode helps reducing storage time.

Section B –(5 x 8marks = 40)

2.	A resistance of 25Ω, inductance 64mH and capacitance 80 μF are connected in series across single phase 110V, 50 Hz supply. Calculate the current, voltage across each element and power factor of the circuit. Draw the phasor diagram taking current as reference axis and show all the voltage vectors. OR A series RLC circuit has a resistance of 50 Ω, inductance 0.1 H and capacitance 50 μF connected in series across single phase 230V, 50 Hz supply. Calculate current drawn, power factor, active and reactive power consumed by the circuit. Also draw the phasor diagram.	CO1
3.	Explain Self bias transistor bistable multivibrator. OR Explain and draw collector coupled astable multivibrator.	CO2
4.	Explain the operation of transistor as a switch. Discuss its various switching times and draw the switching waveforms OR Explain the operation of diode as a switch. Discuss its various switching times and draw the switching waveforms.	CO3
5.	Discuss the response of a Low Pass RC circuit to a step input voltage OR Discuss the response of a high pass RC circuit to a square wave input voltage	CO4
6.	Explain the Inverting comparator with waveforms OR Explain the operation of series negative clipper.	CO5