B.Tech. (ECE)   (Sem.–5)

PULSE AND DIGITAL SWITCHING CIRCUIT

Subject Code : EC-309

M.Code : 57523

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. **Write briefly :**

   a. Why are ringing circuits used? Discuss

   b. Why is non-saturating bistable multivibrators used?

   c. Draw the circuit for op-amp astable multivibrators.

   d. How does transistor act as switch?

   e. Explain charge storage phenomenon.

   f. Differentiate between linear and non-linear wave-shaping circuits.

   g. Explain the term distributed amplifiers.

   h. Discuss high frequency compensation in wide band amplifier.

   i. How does Schottky diode reduce storage time in the transistor?

   j. Draw transistor based circuit diagram of Schmitt trigger.

SECTION-B

2. Draw and explain the circuit of transistor clipper with the help of waveforms.

3. How low pass RC circuit may be used as integrator? Explain

4. What do you mean by symmetrical and unsymmetrical triggering in multivibrators? Explain.

5. With the help of circuit diagram and waveform, explain the operation of collector coupled transistor bistable multivibrators.

6. Explain the applications of Voltage Comparators.

SECTION-C

7. Write a short note on :

   a) Rise Time

   b) Fall Time

   c) Clamping circuits

   d) Distributed Amplifiers

8. Discuss the steady state switching behaviour and characteristics of the semiconductor diode.

9. Explain the operation of unsymmetrical triggering using is done using a unilateral device.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.