

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

Paper ID [A0315]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem.- 5th)

PULSE AND DIGITAL SWITCHING CIRCUITS (EC-309)

Time : 03 Hours

Maximum Marks :60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) What is main reason of applying a step voltage input in a high pass RC circuit?
- b) Define underdamped response.
- c) Define lower 3 db frequency.
- d) What is short circuit common base cut off frequency in wide band amplifier?
- e) What are slicers?
- f) What is criteria for a good differentiating circuit?
- g) "Clipping circuit is to suppress amplitude variations in the input signal voltage". Is the statement correct and why.
- h) What should be the value of β in astable multivibrator?
- i) On what parameters does the frequency of oscillation of an astable multivibrator depends.
- j) Define storage time in a conducting diode.

Section - B

(4 × 5 = 20)

- Q2)** Describe with circuit diagram response of a high pass RC circuit to a step voltage input.
- Q3)** What is double differentiator circuit. Discuss with circuit diagram?
- Q4)** Derive an expression for shunt capacitance of a transistor stage in cascade.
- Q5)** Describe how a Transistor behaves as a switch.
- Q6)** Discuss how a Schotkey diode help in reducing storage time.

Section - C

(2 × 10 = 20)

- Q7)** (a) Describe with a circuit diagram and waveform function of a transistor clipper.
(b) Discuss working of a diode - differentiator comparator.
- Q8)** (a) Describe with circuit diagram and waveforms working of Bistable multivibrator.
(b) Discuss various applications of Bistable multivibrator.
- Q9)** (a) Discuss with diagram and waveform working of a sweep generator.
(b) Describe a clamping circuit by taking source and diode resistance into account.

