

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

B.Tech. (Sem. - 5th)

PULSE AND DIGITAL SWITCHING CIRCUITS

SUBJECT CODE : EC - 309

Paper ID : [A0315]

[Note : Please fill subject code and paper ID on OMR]

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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 pulse voltage input in a high pass RC circuit?
- b) Define overdamped response.
- c) Define half power frequency.
- d) What are amplitude selectors?
- e) What is short circuit current gain-bandwidth product in wideband amplifier?
- f) What is criteria for a good integrating circuit?
- g) "Clipping circuit is to remove a certain portion of the input signal above or below a certain level". Is the statement correct and why.
- h) Does the value of β in astable multivibrator greater than 1.
- i) Write any factor that contribute to the delay time in a transistor?
- j) On what parameters does the frequency of oscillation of an astable multivibrator depends?

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P.T.O.

Section - B

(4 × 5 = 20)

- Q2)** Describe with circuit diagram response of a high pass RC circuit to a sinusoidal voltage input.
- Q3)** Discuss with diagram working of a circuit that will obtain nearly underdamped oscillations.
- Q4)** Derive an expression for a short circuit current gain bandwidth product for a CE transistor configuration.
- Q5)** Describe how a diode behaves as a switch?
- Q6)** Discuss behaviour of MOS transistor as a switch.

Section - C

(2 × 10 = 20)

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

