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Total No. of Questions : 09]

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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]

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 the relation between 3db frequency and time constant in high pass RC circuit?
- b) What should be provided to an attenuator to get attenuation independent of frequency?
- c) What is relation between bandwidth and rise time of an amplifier?
- d) What is the effect of bypass capacitor on bandwidth of amplifier?
- e) Define storage time of a diode?
- f) Write application of a Schottky diode?
- g) Why under reverse biased conditioned a diode is assumed to be open circuited?
- h) Define a Limiter?
- i) Write advantage of using parallel clipper over series clipper?
- j) What is a free running multivibrator?

Section - B

(4 × 5 = 20)

- Q2)** Derive and draw the response of high pass RC circuit to square wave input voltage?
- Q3)** What is double differentiator circuit? Draw and explain its response to ramp input?
- Q4)** Explain shunt compensation used with basic amplifier?
- Q5)** Write a note on distributed amplifiers listing its important features?
- Q6)** Explain how a transistor can be used as a switch in a circuit and under what condition a transistor is said to be OFF and ON respectively?

Section - C

(2 × 10 = 20)

- Q7)** (a) Describe how Schottky diode helps reducing storage time?
(b) Explain behavior of MOS transistor as a switch?
- Q8)** (a) What is effect of diode characteristics on Clamping voltage?
(b) Explain with circuit diagram function of a positive clipper with voltage divider circuit?
- Q9)** (a) Discuss unsymmetrical triggering of a Bistable Multivibrator?
(b) Explain with circuit diagram function of collector coupled Multivibrator?

