Roll No. | | | | | | | | | | | |

Total No. of Pages: 02

Total No. of Questions: 09

# B. Tech. (ECE, ETE) (Sem.4th)
# PULSE WAVE SHAPING AND SWITCHING
## Subject Code-BTEC-405
## Paper ID: [A1193]

**Time: 3 Hrs.** **Max. Marks: 60**

***INSTRUCTION TO CANDIDATES:***

1. ***Section-A is COMPULSORY consisting of TEN questions carrying 2 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

**Q1.**

(a) Draw a circuit diagram of series and parallel resonant circuit?

(b) What type of triggering is used in a monostable multivibrator?

(c) Draw neat circuit diagram of a differentiator circuit employing passive circuit components?

(d) What are the applications of an astable multivibrator?

(e) What is the average value of the output of an *RC* low-pass filter?

(f) Draw a neat circuit diagram and output characteristics of a CE transistor as a switch?

(g) Define rise time and recovery time?

(h) Explain the basic parallel clipper circuit?

(i) Explain the characteristics of a practical clamper circuit?

(j) What is the expression of an RC high-pass filter for a step input?

## Section B

2. Explain diode comparator circuit?

3. Explain the Schottky diode and its operation with suitable equations?

4. Explain the attenuator circuit, with suitable equations and waveforms?

5. Draw the circuit diagram of Schmitt trigger circuit and also draw its waveforms?

6. Explain different circuits and waveforms of clipping and clamping circuits?

## Section C

7. Explain in detail the response of the RC low-pass filter to a sinusoidal input, with suitable mathematical equations and corresponding waveforms

8. Derive the expressions of UTP and LTP for a Schmitt trigger circuit?

9. Explain fixed-bias and self-bias bistable multvibrator?

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