

III B. Tech I Semester Supplementary Examinations, October/November - 2020**PULSE AND DIGITAL CIRCUITS**

(Common to Electronics and Communication Engineering, Electronics and Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any Three Questions from **Part-B**

PART - A**(22 Marks)**

1. a) Compare the response of RC low pass and high pass circuit when square Wave as input at $t \ll T_p$? [4M]
- b) Classify the Clampers. [3M]
- c) Define Fan-in and Fan-out. [3M]
- d) Explain the need of symmetrical and Unsymmetrical Triggering. [4M]
- e) If sweep time is $500 \mu s$ and time constant RC is $100 \mu s$. Estimate e_s , e_d , and e_t ? [4M]
- f) Explain the need of Sampling Gate. [4M]

PART - B**(48 Marks)**

2. a) Derive the gain response of a RC high pass Circuit when sinusoidal signal as input. [8M]
- b) Design an attenuator circuit with RC components and explain its function. [8M]
3. a) Explain the function of positive clamper circuit with suitable waveforms. [8M]
- b) Explain the function of Emitter coupled clipper with waveforms. [8M]
4. a) Explain the function of Astable multivibrator with waveforms. [8M]
- b) Sketch the output waveform of a Schmitt trigger circuit for sine wave input of 12V peak to peak if $UTP = 5V$ and $LTP = 3V$. [8M]
5. a) Explain the function of a transistor as a switch. [8M]
- b) Define TTL. Design an OR Gate with TTL logic and explain the function. [8M]
6. a) Why the time - base generators are called sweep Circuits? Explain. [8M]
- b) Explain briefly the different methods of generating time-base Signal. [8M]
7. a) Explain the basic principle of sampling gate using series switch and also give the applications of sampling gates. [8M]
- b) Describe the Synchronization with 2:1 frequency division with a neat diagram. [8M]
