(c) Why are clipping circuits called limiting circuits ?

(d) Define unidirectional sampling gate.

(e) What are pedestal in gate circuits ?

(f) Draw a 2 bit Flash type ADC.

(g) Explain sampling.

(h) What are the advantage of successive approximation ADC ?

(i) How can op-amp be used as comparator ?

(j) What is the effect of time constant of an RC circuit on differentiated wave ?   **10×1.5=15**

Roll No. ....

Total Pages : 04

MAR-21-210061

B. Tech. EXAMINATION, March 2021

Semester IV (CBCS)

PULSE SHAPING AND WAVE GENERATION

EC-404

Time : 2 *Hours*   *Maximum Marks* : 60

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from each Sections A, B, C and D. All questions carry equal marks.

Section A

1. (a) Discuss low pass RC circuit. Explain RC low pass circuit as integrator.   **7.5**

   (b) Differentiate between high pass RC circuit and low pass RC circuit.   **7.5**

2. (a) Explain the response of RC high pass circuit excited by step input and also derive its equation. **7.5**

(b) Explain principle and working of Miller Time Base Generator with suitable diagram. **7.5**

Section B

3. (a) What are the clipping circuits ? Explain diode clippers with the help of neat circuit diagram and illustrative waveforms. **7.5**

(b) Design a clamping circuit which clamps a sinusoidal signal at negative peak. Also explain its working. **7.5**

4. (a) Draw and explain a circuit diagram for transistorized circuit clipping at two independent levels. **7.5**

(b) Draw and explain transfer characteristics of clamping circuits. What is the effect of diode characteristics on clamping voltage ? **7.5**

Section C

5. (a) What do you understand by gate ? Discuss Bidirectional gates using transistors. **7.5**

(b) Discuss operating principle of Sampling Gates with it applications. **7.5**

6. (a) Give construction and working principle of UJT. **7.5**

(b) Draw and explain Pin diagram of 555 timer. **7.5**

Section D

7. (a) Define Oscillator. Draw and explain voltage controlled oscillator. **7.5**

(b) State multi-vibrator. Analyze and design Bistable multi-vibrator. **7.5**

8. (a) What do you understand by quantization ? Explain, how binary ladder network convert digital signal to analog signal. **7.5**

(b) Explain Dual Slope Integration type Analog to Digital Converter. **7.5**

9. (a) Why the capacitor used in High pass RC circuit is called blocked capacitors ?

(b) What do you understand by Pulse shaping and Wave Generation ?