

BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY
Question Bank (K - Scheme)

Name of subject: Analog Electronics
Subject code: 313324

Unit Test :II
Course : EJ3K
Semester: III

Unit – III - Waveform Generators (14 M)

2 Marks

1. Define Oscillator. Classify Oscillators.
2. Compare Oscillator and Amplifier.
3. State the Barkhausen criteria
4. State need of Oscillators.

4 Marks

5. Draw and Explain RC phase shift Oscillator using Op-amp.
6. Describe the working principle of crystal oscillator with circuit diagram.
7. Draw and Explain Hartley Oscillator using Op-amp.

Unit – IV - Active Filters (14 M)

2 Marks

1. Compare active and passive filter.
2. Define terms related to filters: Order of filter, cut off frequency.
3. Define terms related to filters: Center frequency, Roll off rate.
4. Compare first order filter and second order filter.

4 Marks

5. Draw the circuit diagram of first order low pass filter. Give expression of cut off frequency and gain.
6. Give merits and de-merits of Active filter.
7. Draw the circuit diagram of first order high pass filter. Give expression of cut off frequency and gain.
8. For a first order butterworth low pass filter, Calculate the cut-off frequency if $R = 10\text{k}\Omega$ and $C = 0.001\mu\text{F}$. Also calculate the passband voltage gain if $R_1 = 10\text{k}\Omega$ and $R_F = 100\text{k}\Omega$.

Unit – V - Specialized IC Applications (12 M)

2 Marks

1. Draw pin diagram of IC 565 PLL.
2. Define Lock range, Capture range.
3. Define Multivibrator and Classify Multivibrators.
4. Draw pin diagram of IC 555.

4 Marks

5. Draw the circuit of Astable Multivibrator using IC 555 and describe its working.
6. Draw the circuit of Monostable Multivibrator using IC 555 and describe its working.
7. Draw block diagram of PLL and describe the function of each block.
8. Draw and explain the working of FM demodulator using PLL.
9. Calculate T_{on} , T_{off} and frequency of Astable multivibrator with $R_A = 10\text{k}\Omega$, $R_B = 5\text{k}\Omega$, $C = 0.1\mu\text{F}$.