



B.Sc. III Semester Degree Examination, March/April - 2023

ELECTRONICS

Paper No. DSC 3 : Oscillations and OP-Amps

(NEP)

Time : 2 Hours

Maximum Marks : 60

Note : Answer *all* sections.

SECTION - A

1. Answer **all** sub-questions. **10x1=10**
- (a) What is linear waveshaping ?
 - (b) What is Oscillator in Electronics ?
 - (c) Define multivibrators.
 - (d) What is Operational Amplifier ?
 - (e) Define slew rate in Op-Amp.
 - (f) Define pulse time in waveshaping.
 - (g) Expand CMRR.
 - (h) Define Active Filters.
 - (i) Define comparator in Op-Amp.
 - (j) What is Analog Computer ?

SECTION - B

Answer **any four** questions.

4x5=20

- 2. Explain the working of Positive and Negative Clipping Circuits.
- 3. Deduce the expression for condition of sustained Oscillation in Oscillator Circuit.
- 4. Explain Astable multivibrates using transistor.



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5. List the Ideal characteristics of Op-Amp.
6. What is Scale Changer ? Construct Op-Amp as Adder Circuit.
7. Construct Op-Amp phase shift oscillator circuit and explain in brief.

SECTION - C

Answer **any three** questions.

3x10=30

8. Explain the RC Integrating circuit and Sketch I/P and O/P waveforms for square and triangular waves.
9. Explain the Hartely Oscillator using transistor. Write the frequency formula.
10. Explain the Bistable multivibrator circuit using transistor.
11. Explain the emitter coupled differential amplifier and sketch waveforms in common mode and differential mode.
12. Explain Active high pass filter Op-Amp and draw the frequency response curve.

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