

M.Sc. 1st Semester Examination, 2023

ELECTRONICS

(Analog Electronics laboratory)

(Practical)

PAPER – ELC-196

Full Marks : 50

Time : 3 hours

The figures in the right hand margin indicate marks

Answer any **one** question from the following :
Question will be selected by lucky draw.

1. Design & implement first order active high pass filter of cut-off frequency___ and gain ___(to be supplied during examination). Study frequency response, find cut-off frequency.

2. Design and implement a second order active high pass filter of cut-off frequency ___ & gain ___ (to be supplied during examination). Study frequency response & find cut-off frequency.
3. Design and implement an active first order low pass filter of cut-off frequency ___ & gain ___ (to be supplied during examination). Draw the frequency response curve & find the cut-off frequency.
4. Design and implement of an active second order low pass filter of cut-off frequency ___ & gain ___ (to be supplied during examination). Draw the frequency response curve & find the cut-off frequency.
5. Design and implement a regulated power supply of ___ volt & ___ mA current (to be supplied during examination) using power transistor as pass transistor. Find load & line regulation.

6. Design and implement an integrator circuit using OP-AMP and find the transfer characteristic.
7. Design and implement a R-C phase shift oscillator of frequency___ (to be supplied during examination)
8. Design and implement a differentiator circuit using OP-AMP. & find the transfer characteristics.
9. Design and implement a fixed bias transistor circuit. Find V_{BE} , V_{CE} , V_{CB} , I_C , I_B , I_E at the Q point, draw the load line.
10. Design and implement a variable regulated power supply using LM317. Find line & load regulation at two different voltages.

Distribution of Marks

Circuit design : 15 Marks

Implementation : 10 Marks

Record of data : 10 Marks

Viva : 10 Marks

Laboratory Note Book : 05 Marks

Total : 50 Marks