Sessional Test-1

B. Tech. (ECE)-V semester

Active Filters and Signal Processing (ECS-501)

Time: 1 Hour

Note: Attempts all questions

Questions	Marks
1. Sketch a neat circuit diagram of floating inductor using Op-amps and passive components and hence, derive the expression of the value of inductance realized.	8
2. Derive the expression of V_4 in terms of V_1, V_2 and V_3 in Fig. 1 and show that the circuit behaves like a MISO-type biquad and also calculate the value of cut-off frequency when $C_1 = C_2 = 0.01\mu F$, $V_{cc} = \pm 15V$, R_B of $100K\Omega$ connected between pin no 5 and ground of each OTAs .	8

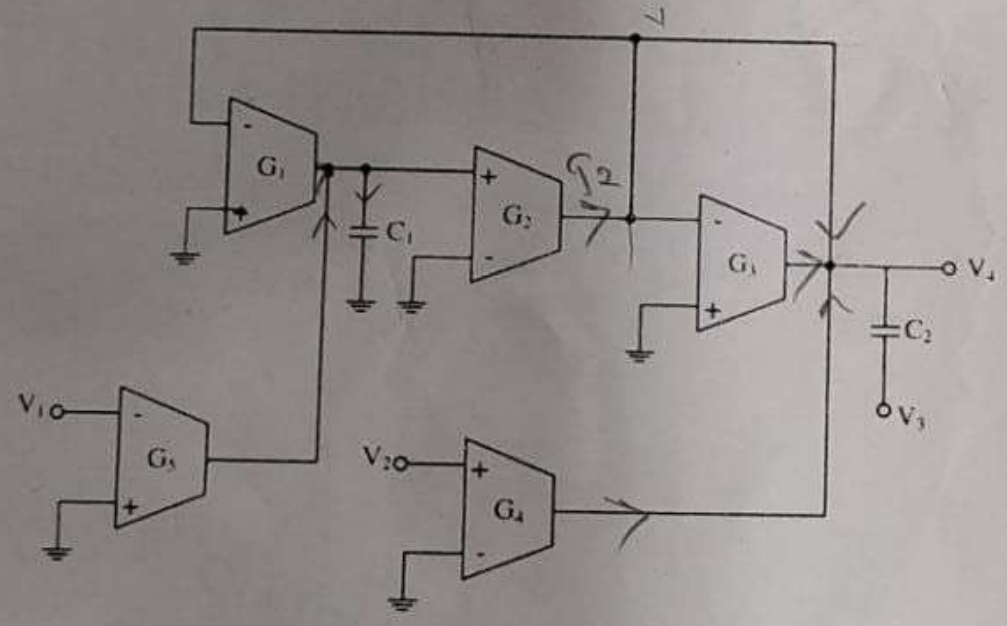

Fig. 1