

Dept.: CSE (16th Batch, Section: B) CT-01 Total Marks:15 Time: 20 minutes

- a. Draw the differentiator circuit using an op-amp hence derive the o/p equation. **05**
- b. Design an op-amp circuit to perform the equation $V_o = 3V_1 - 4V_2 - 3 \frac{dV_3}{dt}$. **05**
- c. Take a gate pulse waveform of amplitude +1V with time duration 0 to 1s. Now determine the o/p for an integrator circuit using op-amp for this gate pulse as a input (Let $R=R$ ohm and $C= 1/R$ ohm). **05**