

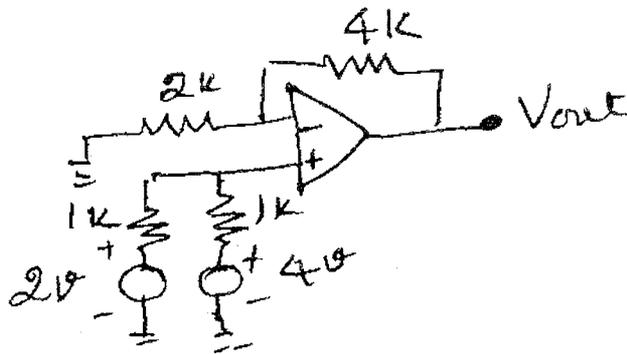
6. Find the resolution of a 8 bit D/A converter.
7. Enlist the important features of 555 timer circuit.
8. Determine the output pulsewidth of the monostable amplifier using 555 timer if $R = 10 \text{ K}\Omega$ and $C = 0.01 \mu\text{F}$.
9. What is an opto coupler? Draw the circuit diagram of an IC opto coupler.
10. What is the need for using switching regulators?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Briefly explain the process of ion implantation in IC fabrication. (8)
 (ii) Explain the diffusion process as applied to IC technology. (8)

Or

- (b) How are resistors and capacitors fabricated in monolithic technology? Discuss.
12. (a) (i) Write a technical note on frequency response characteristics of Differential amplifier. State the importance of frequency compensation. (10)
 (ii) Determine the output voltage for the circuit shown in figure. (6)



Or

- (b) (i) Explain various dc and ac characteristics of an op-amp. Distinguish between ideal and practical characteristics. (12)
 (ii) Determine the output voltage of the differential amplifier having input voltages $V_1 = 1 \text{ mV}$ and $V_2 = 2 \text{ mV}$. The amplifier has a differential gain of 5000 and CMRR 1000. (4)

13. (a) (i) Design a monostable multivibrator using op-amp. (8)
(ii) Explain the working of clamper and sample/hold circuit. (8)

Or

- 555 timer
er.
- (b) (i) Briefly explain R-2R type D/A converter. Mention its advantages and disadvantages. (8)
(ii) Explain the working of successive approximation type A/D converter. (8)
14. (a) (i) With block diagram explain the principle of operation of NE565 phase locked loop. (8)
(ii) Describe the monostable operation of 555 timer. (8)

Or

- ion. (8)
(8)
- (b) (i) With circuit schematic explain how the multiplier IC AD523 can be used as squarer and divider circuits. (8)
(ii) Describe the working of VCO. (8)
- ology?
15. (a) (i) Discuss ICL 8038 function generator. (8)
(ii) Briefly explain protection circuits in voltage regulators. (8)

Or

- ics of
uency
(10)
(6)
- (b) Write short notes on :
- (i) LM 380 audio power amplifier. (10)
(ii) Opto electronic ICs. (6)
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(2)

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a
(4)

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