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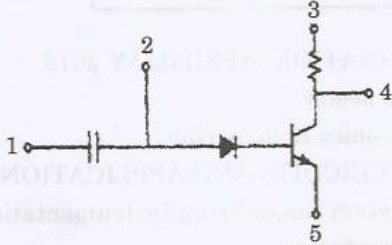
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PART – B

(5×13=65 Marks)

11. a) Describe the steps involved in the fabrication of monolithic IC transistors. (13)



(OR)

- b) Elaborate the fabrication of MOS ICs with suitable diagram. (13)

12. a) i) Explain the working principle of emitter coupled differential amplifier. (7)

- ii) How common mode rejection ratio can be increased using constant current source? (6)

(OR)

- b) i) Draw the inverting amplifier circuit of an op-amp in closed loop configuration. Obtain the expression for the closed loop gain. (7)

- ii) For a non-inverting amplifier using an op-amp assume $R_1 = 470 \text{ ohm}$ and $R_2 = 4.7 \text{ kohm}$. Calculate the closed loop voltage gain of the amplifier. (6)

13. a) i) Design a weinbridge oscillator for a frequency of 5 kHz. Assume $C = 0.01 \text{ micro farad}$. (4)

- ii) Explain the operation of a triangular waveform generator using op-amp. (9)

(OR)

- b) i) Discuss the operation of successive approximation type A/D converter. (11)

- ii) What are the advantages of continuous type A/D converter over counter type A/D converter? (2)

14. a) i) Explain the functional block diagram of NE561 phase locked loop. (7)

- ii) Narrate the process of FSK demodulation using PLL. (6)

(OR)

- b) Describe the working principle of the variable trans-conductance analog multiplier. (13)



15. a) i) Explain the working principle of basic linear voltage regulator using op-amp. (7)
ii) Explain the operation of a monolithic IC Class-A audio power amplifier LM380. (6)
- (OR)
- b) Write a detailed note on switching regulators. (13)

PART – C

(1×15=15 Marks)

16. a) What are the new trends in Integrated circuit technologies and explain about its scope for future generation ?
- (OR)
- b) Write a note on recent fabrication methods of diode and capacitance for industrial applications.