Q 2 (a) Explain

(i) Diffusion

(ii) Ion implantation used in IC fabrication

Answer Page number 9 to 10 of Text Book - II

Q 2 (b) Explain how a complementary MOSFET (CMOS) is fabricated on an IC.

Answer Page number 30 of Text Book – II

Q 3 (a) The transistor in the CC circuit in fig has the following parameter h_{ie} =2.1 ker and h_{fe} =75,

(1) calculate the Z_{in},Z_{out}, with R_L not connected

(2) Z_{in} and A_v with R_L connect .

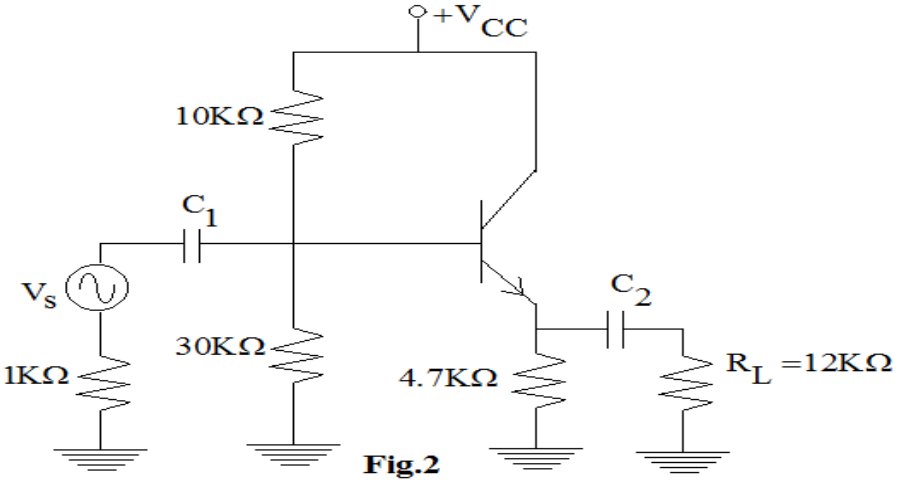

Fig.2

Answer Page Number 267 of Text Book – I

Q 3 (b) Compare the performance of CE, CC, and CB circuits

Answer Page Number 275 Textbook – I

Q 4 (a) Explain the drain characteristics of n-channel JFET with V_{GS} = 0 V.

Answer Page No 223 to 226 of Textbook - I

Q 4 (b) Explain the terms:

(i) Transconductance

(ii) Drain Resistance

(iii) Breakdown Voltage with respect to JFET

Answer Page number 233 to 236 TextBook – I

Q 5 (a) Explain, with a neat diagram, the working of a Class A transformer coupled power amplifier.

Answer Page Number 515 to 517 of Text Book - I

Q 5 (b) Write a short note on LED and Optocoupler.

Answer Page Number 948 ,971 of Text Book – I

Q 6 (a) Derive an expression for the gain of Non-Inverting Amplifier using op amp

Answer Page Number 47 to 48 of Text Book - II

Q 6(b) For the circuit shown in Fig.3 below, calculate
(i) V_0 **(ii)** A_{CL} **(iii) the load current** i_L **(iv) total current** i_o

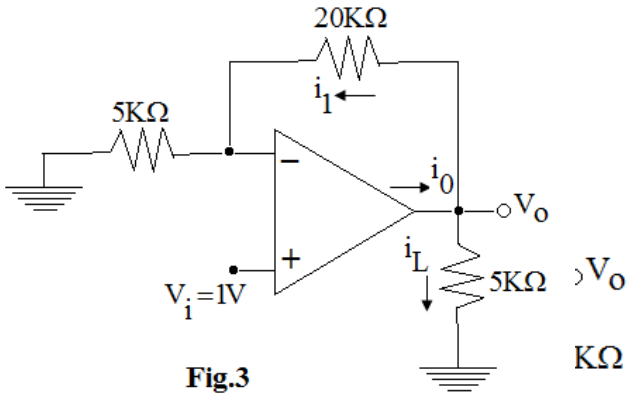

Fig.3

Fig.3

Answer Page Number 49 of Text Book – II, Example (2.4)

Q 7 (a) Draw the circuit of Inverting summing amplifier using an op-amp and derive the expression for its output voltage.

Answer Page Number 136 of Text Book - II

Q 7 (b) Explain the working of the following circuits using op-amp.
(i) Peak Detector (ii) Clipper

Answer Page Number 151 to 152 of Text Book – II

Q 8 (a) Explain the working of a Schmitt Trigger using an op-amp, with waveforms.

Answer Page Number 212 to 214 of Text Book - II

Q 8 (b) Explain the working of 555 timer as monostable multivibrator. Also derive the expression of frequency of oscillation

Answer Page Number 318 to 320 of Text Book – II

Q 9 (a) Explain how a fixed voltage regulator can be used as a
(i) Current Source (ii) Adjustable Regulator

Answer Page Number 245 to 246 of Text Book - II

Q 9 (b) Explain the working of Counter type A/D Converter.

Answer Page Number 360 to 361of Text Book - II

Text Books

I. Electronic Devices and Circuits, Fourth Edition, David A Bell, PHI (2006).

II. Linear Integrated Circuits, Revised Second Edition, D. Roy Choudhury, Shail B. Jain, New Age International Publishers.