

BE SEM III (ELCTRICAL) Question bank

Linear Electronics

All questions carry equal marks(10 marks)

Q.1	Explain Ripple factor and Transformer utilization factor in half wave rectifier.
Q.2	Explain Varactor Diode and Tunnel diode and its application.
Q.3	Explain oscillator principle and classify them.
Q.4	Explain Zener diode as voltage regulator.
Q.5	Explain V-I characteristics of P-N junction diode.
Q.6	Describe Full wave Bridge Rectifier wit it's analysis..
Q.7	Give a comparison of CE_CB_CC configurations
Q.8	With circuit diagram and characteristics, explain input and output characteristics of transistor in common base mode
Q.9	Describe Half wave bridge rectifier
Q.10	Explain Coupling and Bypass capacitor
Q.11	Define α and β in transistor and relation between α and β .
Q.12	Describe rectifier filters
Q.13	Explain how D.C. load line is drawn on input characteristics of CE transistor configuration and state its importance
Q.14	Explain DC load line concept
Q.15	Explain procedure to determine h-parameter hfe, hoe of transistor from static output characteristics.
Q.16	Explain collpits oscillator
Q.17	Explain Drain characteristic of F.E.T.
Q.18	Explain LED consruction and applications
Q.19	Explain Comparison of CB, CC, CE transistor configuration.
Q.20	Explain Transistor as a switch.
Q.21	Explain working of MOSFET in both mode.

Q.22	Explain TTL circuits
Q.23	Explain Circuit operation of Phase Shift Oscillator with advantages and disadvantages.
Q.24	explain Bistable multivibrator.
Q.25	Draw and explain hybrid small signal model of transistor in CE configuration and expression for R_i , R_o , and A_v
Q.26	Explain Ripple factor and Transformer utilization factor in half wave rectifier.
Q.27	Explain Voltage divider biasing method for transistor and prove the stability factor $S=1$ for voltage divider biasing method
Q.28	Explain Varactor Diode and Tunnel diode and its application.
Q.29	Discuss the effect of negative feedback on Gain, Bandwidth and Input impedance.
Q.30	Define terms in power amplifier: a) Collector efficiency (b) Distortion (c) Power dissipation capability
Q.31	The load resistance of center tapped full wave rectifier is $500\ \Omega$ and the necessary max. value of sinusoidal voltage is 60 volts. Calculate (i) peak, average and r.m.s. value of current (ii) Ripple factor (iii) efficiency of rectifier. Forward resistance R_f of ideal diode is $50\ \Omega$.
Q.32	Define class A, class B and class C operation of an Amplifier.
Q.33	A half wave rectifier uses a diode with a forward resistance of $100\ \Omega$. If the input a.c. voltage is $220\ \text{V}$ (r.m.s.) and load resistance is of $2\ \text{K}\ \Omega$. Determine (i) I_{dc} and I_{rms} (ii) PIV when diode is ideal. (iii) DC output power and a.c. input power. (iv) Ripple factor (v) Transformer utilisation factor
Q.34	Explain R-C Coupled amplifier with its advantages, disadvantages and its application.
Q.35	Derive the expression of Maximum collector efficiency of series fed Class A Amplifier.
Q.36	Define the feedback, positive feedback and negative feedback with diagram.
Q.37	Explain Circuit operation of wein bridge oscillator with advantages and disadvantages.
Q.38	Explain stabilisation and define the stability Factor and derive the expression for it.
Q.39	explain Class B push pull amplifier.
Q.40	explain Diode as a clipper