

MODEL QUESTIONS FOR APPLIED PHYSICS LAB EXAMINATION.

ELECTRICAL STREAM

Q.NO.01	Determine the Energy gap of a semiconductor using Four Probe Method
Q.NO.02	Calculate the resonance frequency of the given LCR parallel Circuit, and Compare the theoretical and experimental resonance frequency. Given: $L=10\text{ mH}$, $C=0.1\text{ }\mu\text{F}$, $R=50\Omega$.
Q.NO.03	Calculate the resonance frequency of the given LCR series Circuit, and Compare the theoretical and experimental resonance frequency. Given: $L=10\text{ mH}$, $C=0.1\text{ }\mu\text{F}$, $R=50\Omega$.
Q.NO.04	Determine a dielectric constant of a material using a DC charging and discharging Capacitor circuit. Given: $C_1 = 100\text{ }\mu\text{F}$, $t=0.1\text{ mm}$, $l=50\text{ mm}$, $w=6\text{ mm}$. Identify the given Dielectric material
Q.NO.05	Study the input characteristics of a given NPN transistor Determine the output characteristics of a NPN Transistor, and obtain the current Amplification factor (β).
Q.NO.06	Obtain the VI characteristics of given diode. i. Determine the cut-in voltage and dynamic resistance ii. Determine the operating point (Q) and load resistance using DC load line.
Q.NO.07	Using Cathode Ray Oscilloscope i. Calibrate CRO ii. Measure DC Voltage iii. Measure AC Voltage iv. Measure AC Frequency
Q.NO.08	Verify Kirchhoff's voltage law and Kirchhoff's current law using 100Ω , 220Ω and 1000Ω Resistances
Q.NO.09	Execute half wave and full wave rectifier with and without filter and find its performance parameters.
Q.NO.10	Verify the truth table of any two basic gates (AND gate, OR gate and NOT gate) using their IC's. Also verify half adder truth table.
Q.NO.11	i. Obtain the reverse characteristics of a Zener diode and determine reverse break down voltage (V_z) of Zener diode and comment on the results. ii. Use Zener diode in Reverse bias as voltage regulator and calculate the percentage of line regulation.
Q.NO.12	i. Obtain the reverse characteristics of a Zener diode and determine reverse break down voltage (V_z) of Zener diode and comment on the results. ii. Use Zener diode in Reverse bias as voltage regulator and calculate the percentage of load regulation