

2023

COMPUTER SCIENCE — HONOURS — PRACTICAL

Paper : CC-4P

(Basic Electronic Devices and Circuits)

Full Marks : 30

Marks Distribution

1. Viva voce	: 05
2. Laboratory Notebook	: 05
3. Experiment	: 20
(i) Design of the Circuit Diagram	: 05
(ii) Implementation	: 10
(iii) Result / Output	: 03
(iv) Discussion	: 02

Set - II

Answer *any one* question.

1. Design a full-wave rectifier using power diodes, step down transformer and capacitors (470 μ F or more). Record and plot the load regulation characteristics on a graph. Calculate the percentage of regulation from the graph. 20
2. Construct and design a positive dc regulated power supply using a step down transformer, power diodes, capacitors (470 μ F or above) and three terminal regulators (7805/7806/7809/7812). Record and plot the load regulation on a graph and calculate the percentage of load regulation from it. 20

(2)

Z(2nd Sm.)-Computer Science-II/Pr.I(CC-4P)/
(Inst.)CBCS/Set - II

3. Construct and study an Inverting amplifier using Operational Amplifier (OPAMP) with 3 different sets of voltage gain and calculate the gain from the graph. Take at least six readings for each set of voltage gain. 20

 4. Construct and study an inverting adder using Operational Amplifier (OPAMP) capable of adding two inputs. Record and plot the voltage transfer characteristics on a graph. Compare the experimental gain (from graph) and theoretical gain (take at least six readings). 20

 5. Construct a 3-bit digital to analog converter using R-2R ladder network constructed out of 10K ohms resistors and Operational Amplifier (if required / optional). 20

 6. Construct an astable multivibrator using Timer 555 with frequency of operation of 1 kHz. Record and plot the output waveform on a graph and calculate the frequency from the graph (Practical). 20

 7. Study the output characteristics of a transistor in CE mode and calculate the dc current gain (β) from the graph. Take the voltage vs. current output characteristics for at least five different input currents. 20

 8. Design a Subtractor using Operational Amplifier (OPAMP). Draw its voltage transfer characteristics and compare the experimental (from the graph) and theoretical gain (take at least six readings). 20
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