Voltage Regulators

Analog Electronics Lab Experiment - 10

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Lab Section: P5
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1. Objective

To study the operation of fixed and adjustable voltage regulators using LM723, in LTSpice.

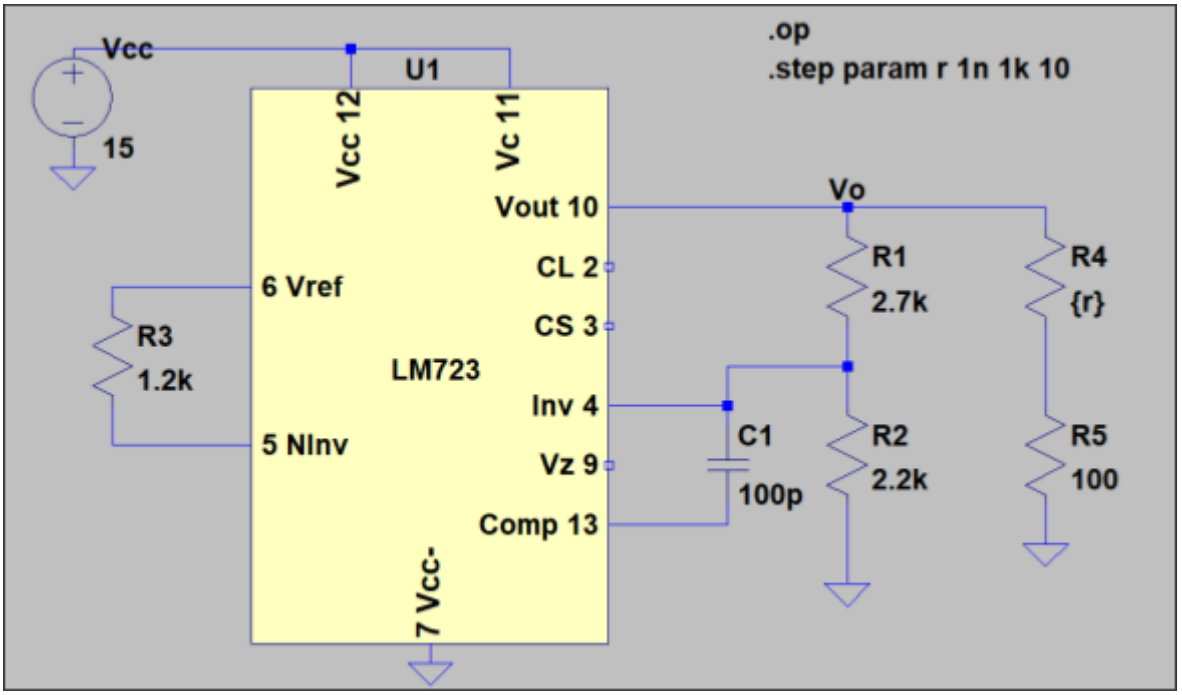
Upload a single PDF file on Nalanda which includes

1) Circuit diagrams for both low and high voltage regulators.

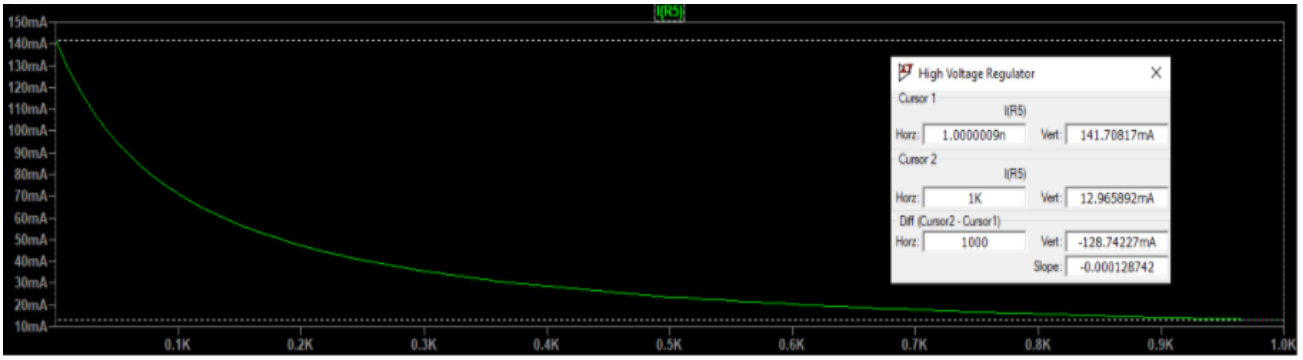
2) Show I(out) and V(out) in tabular form for both circuits.

2. High Voltage Regulators

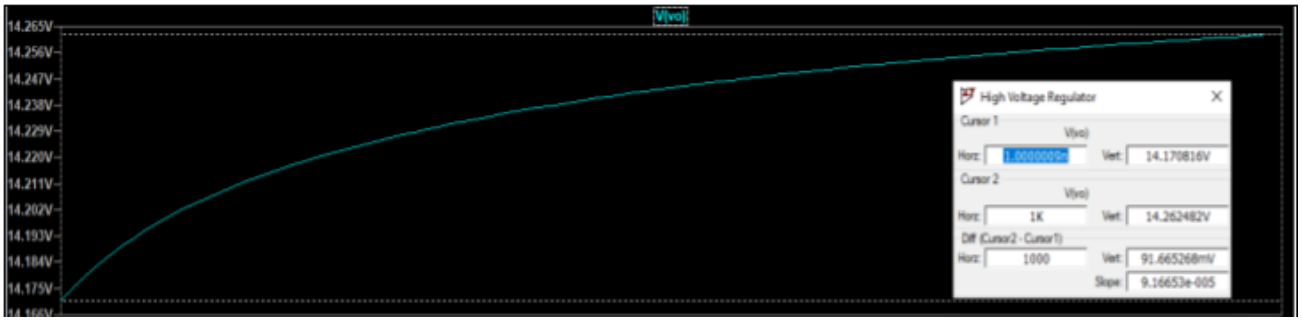
1. **Circuit Diagram**:



2. **Resultant Curve for current**

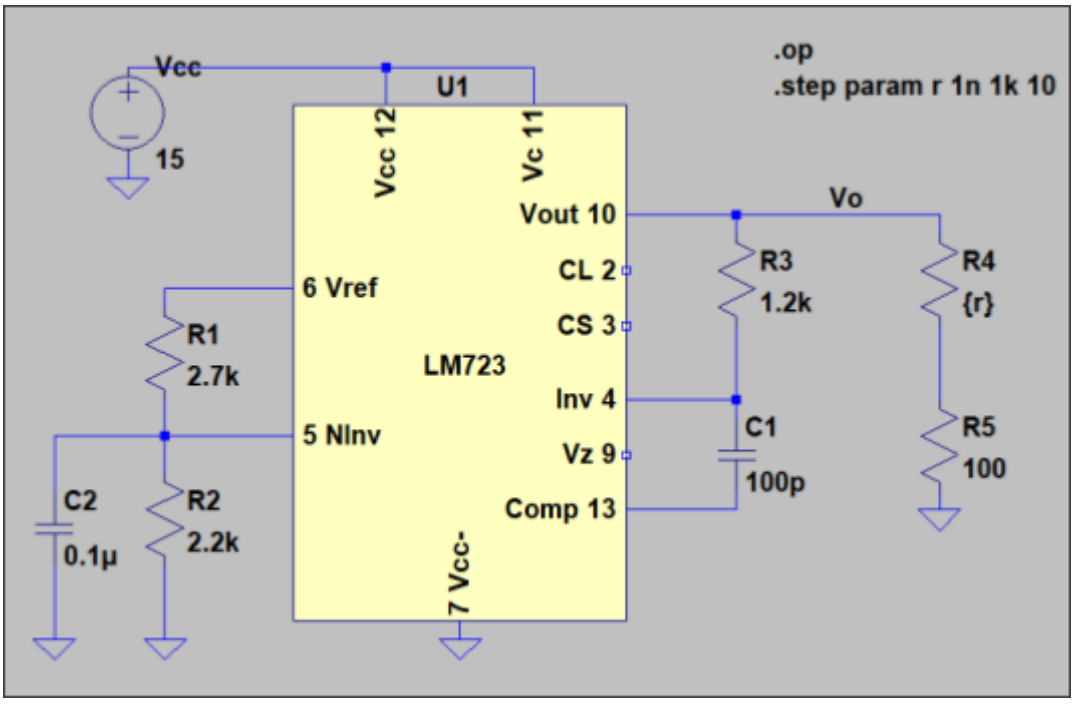


3. **Resultant Curve for Voltage**

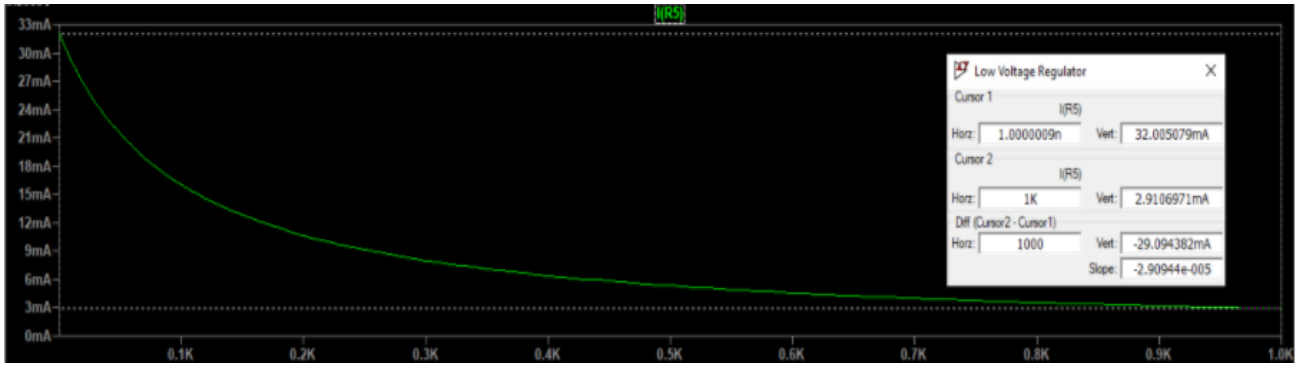


3. Low Voltage Regulators

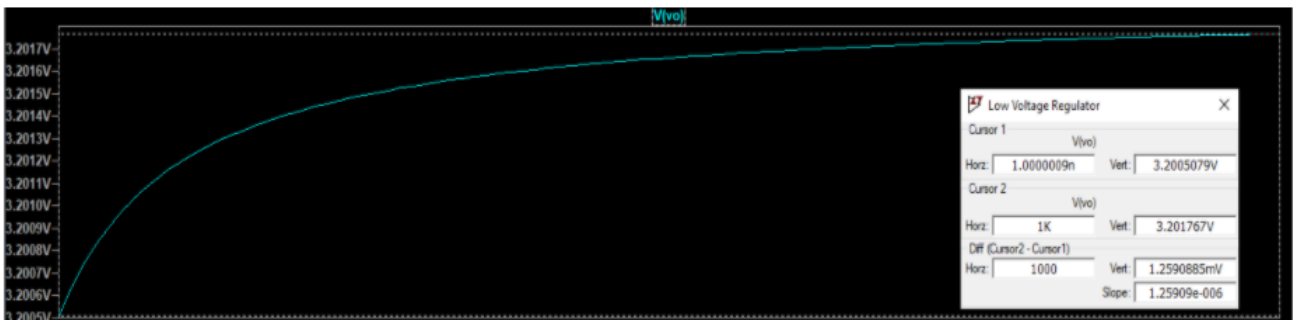
1. **Circuit Diagram**:



2. **Resultant Curve for current**



3. **Resultant Curve for Voltage**



4. Results

- **Voltage regulation calculation:**

Configuration	**Voltage regulation =** $(-V_{(NL)} - V_{(FL)}) / V_{FL}$ **× 100%)**
Low voltage regulation	**0.0393%**
High voltage regulation	**0.6486%**

- **Output voltage and current:**

Configuration	**Output current (mA)**		**Output voltage (V)**	
	No-load	**Full load**	**No-load**	**Full load**
Low voltage regulation	2.9106971	32.005079	3.201767	3.2005079
High voltage regulation	12.965892	141.70817	14.262482	14.170816