

# Contents

<b>INTRODUCTION</b>	<b>1</b>
<b>1 ALGEBRA</b>	<b>2</b>
1.1 Complex numbers	2
<b>2. DC CIRCUITS SOLUTION</b>	<b>7</b>
2.1 Topographic analysis	7
2.1.1 Solution by Kirchhoff's law equations	12
2.1.2 Solution by superposition principle	13
2.1.3 Loop current method	14
2.1.4 Thevenin's theorem	15
2.1.5 Norton's theorem	18
<b>3. TRANSFIGURATION</b>	<b>22</b>
<b>4. SOLUTION OF SINGLE PHASE CURRENTS</b>	<b>24</b>
4.1 RR circuits	24
4.2 RC circuits	26
4.3 RL circuits	47
4.4 RLC circuits	84
<b>5. SOLUTION OF MORE COMPLEX SINGLE PHASE CIRCUITS</b>	<b>147</b>
5.1 Solution of RC circuits	154
<b>6 SOLUTION OF MORE COMPLEX CIRCUITS</b>	<b>171</b>
6.1 Method of Transfiguration in AC Circuits	171
6.2 Solution of AC circuits using Kirchhoff's circuit law	172
6.3 Solution of AC circuits by superposition method	173
6.4 Solution of AC circuits by loop current method	175
6.5 Solution of AC circuits by node voltage method	177