

Contents

Introduction to the Tenth Anniversary Edition	<i>page</i> xvii
Afterword to the Tenth Anniversary Edition	xix
Preface	xxi
Acknowledgements	xxvii
Nomenclature and notation	xxix
 Part I Fundamental concepts	 1
1 Introduction and overview	1
1.1 Global perspectives	1
1.1.1 History of quantum computation and quantum information	2
1.1.2 Future directions	12
1.2 Quantum bits	13
1.2.1 Multiple qubits	16
1.3 Quantum computation	17
1.3.1 Single qubit gates	17
1.3.2 Multiple qubit gates	20
1.3.3 Measurements in bases other than the computational basis	22
1.3.4 Quantum circuits	22
1.3.5 Qubit copying circuit?	24