2.	**UNIT II:** Review of Quantum Mechanics- state vectors, superpositions, UNITary operators, hermitian operators, Schrödinger equation, Hamiltonian evolution, the concept of quantum measurement, the concept of qubits, quantum registers and quantum gates Quantum Algorithms. Introduction to quantum algorithms, Deutsch's algorithm, Shor's algorithm and Grover's search Algorithm, Physical implementation of simple quantum gates.	12
3.	**UNIT III:** Quantum Cryptography and Quantum Teleportation, real physical systems and technological feasibility Heisenberg uncertainty principle, polarization states of photons, quantum cryptography using polarized photons, entanglements.	10
4.	**UNIT IV:** Introduction to the EPR paradox, BELL's theorem, Bell basis, teleportation of a single qubit, review of some current experiments and candidate physical systems, technological feasibility of a quantum computer and the limitations imposed by noise.	10
	Total	**42**

11.Suggested Books

S.No.	Name of Books/ Authors	Year of Publication/ Reprint
1.	Introduction to Quantum Computation and Information By Hoi-Kwong Lo, Tim Spiller, and SanduPopescu/World Scientific.	1998
2.	The Quantum Computer by Jacob West (, 2000). Web Page	April 28, 2000
3.	Quantum Computation and Quantum Information by Michael A. Nielsen & Isaac L. Chuang Cambridge University Press	2010 (10th ed.)

1. Subject Code: **EP-311** Course Title: **Computer Networking**
2..Contact Hours : L : 3 T : 1 P : 0
3Examination Duration (Hrs.) : Theory : 3Practical : 0
4.Relative Weight : CWS : 25 PRS : 0: MTE : 25 ETE : 50 PRE : 0
5.Credits : 4
6.Semester : ODD
7.Subject Area : DEC-2
8.Pre-requisite : Nil
9.Objective : The student will be able to understand about the computer networking and architectures

10. Details of Course :

11.Suggested Books

S. No.	Contents	Contact Hours
1.	**OSI Reference Model and Network Architecture:** Introduction to Computer Networks, Example networks ARPANET, Internet, Private Networks, Network Topologies: Bus-, Star-, Ring-, Hybrid -, Tree -,Complete -, Irregular –Topology; Types of Networks : Local Area Networks, Metropolitan Area Networks, Wide Area Networks; Layering architecture of networks, OSI model, Functions of each layer, Services and Protocols of each layer	**12**
2.	**TCP/IP:** Introduction, History of TCP/IP, Layers of TCP/IP, Protocols, Internet Protocol, Transmission Control Protocol , User Datagram Protocol, IP Addressing, IP address classes, Subnet Addressing, Internet Control Protocols, ARP, RARP, ICMP, Application Layer, Domain Name System, Email – SMTP, POP,IMAP; FTP, NNTP, HTTP, Overview of IP version 6.	**10**
3.	**Local Area Networks:** Introduction to LANs, Features of LANs, Components of LANs, Usage of LANs, LAN Standards, IEEE 802 standards, Channel Access Methods, Aloha, CSMA, CSMA/CD, Token Passing, Ethernet, Layer 2 & 3 switching, Fast Ethernet and Gigabit Ethernet, Token Ring, LAN interconnecting devices: Hubs, Switches, Bridges, Routers, Gateways.	**10**
4.	Wide Area Networks: Introduction of WANs, Routing, Congestion Control, WAN Technologies, Distributed ueue Dual Bus (DQDB), Synchronous Digital Hierarchy (SDH)/ Synchronous Optical Network (SONET), Asynchronous Transfer Mode (ATM), Frame Relay, Wireless Links. Introduction to Network Management: Remote Monitoring Techniques: Polling, Traps, Security management, Firewalls,VLANs, Proxy Servers	**10**
	Total	**42**

S.No.	Name of Books/ Authors	Year of Publication/ Reprint
1.	Computer Networks (3rd edition), Tanenbaum Andrew S International edition	, 1996.
2.	Data Communications, Computer Networks and Open Systems (4th edition), Halsall Fred, Addison Wesley, Low Price Edition.	2000,
3.	Computer Networks – A System Approach, Larry L. Peterson & Bruce S. Davie,	2nd Edition
4.	Computer Networking – ED Tittel, , T.M.H.	2002