(3 Hours) **[Total marks:80]**

N.B.

1) Question No. 1 is compulsory

2) Attempt any **three** from the remaining **five** questions

Q1.		Write Short notes on the following: (any Four)	
	a.	Compare and Contrast OSI model with TCP/IP model	**(5)**
	b.	Link state routing algorithm	**(5)**
	c.	Switches	**(5)**
	d.	FTP	**(5)**
	e.	Transmission impairments	**(5)**
	f.	Shannon Capacity	**(5)**
Q2.	a.	Discuss the differences between error detection and error correction techniques used in the Data Link Layer with example.	**(10)**
	b.	Explain about coaxial cable and fiber optics media for communication	**(10)**
Q3.	a.	What is a network topology? Enumerate the different topologies with a neat diagram with its pros and cons.	**(10)**
	b.	Discuss various random access protocols used for Medium access control.	**(10)**
Q4.	a.	Discuss HTTP messages (Request/Reply) in detail. What are the two types of HTTP connections?	**(10)**
	b.	(i) Discuss the different classes of IPV4 addresses with its range in dotted decimal notation. (ii) One of the addresses in a block is 17.63.110.114/24. Find the number of addresses, the first address and the last address in the block.	**(10)**
Q5.	a.	What is intra domain routing protocol? Discuss the RIP protocol in detail.	**(10)**
	b.	Explain the three-way handshaking of TCP Connection establishment.	**(10)**
Q6.	a.	Explain the concept of Quality of Service (QoS) in network communication and how it ensures efficient delivery of data	**(10)**
	b.	Describe the process of DNS resolution and how it maps domain names to IP addresses	**(10)**