COMPUTER NETWORKS – GOD LEVEL SHORT NOTES

Exam■oriented • Short • Diagram■based • Easy to revise

1) OSI MODEL (7 Layers)

7	Application	User Interface (HTTP, FTP, SMTP)
6	Presentation	Encryption, Compression
5	Session	Session control, Sync
4	Transport	TCP/UDP, Port, Reliability
3	Network	IP, Routing
2	Data Link	Frames, MAC
1	Physical	Bits, Cables

2) TCP vs UDP (Most Asked)

TCP	UDP
Reliable	Unreliable
Connection■oriented	Connectionless
Flow + Error control	No control
Used in HTTP, FTP	Used in DNS, Video

3) IP Addressing (IPv4)

• 32 bits = 4 bytes
• Class A: 1–126 (Large networks)
• Class B: 128–191
• Class C: 192–223
• Private IPs: 10.x.x.x, 172.16–31.x.x, 192.168.x.x

Subnetting Concept Diagram

IP Address	Network Bits	Host Bits
192.168.1.10	192.168.1	10

4) Network Devices

Hub → Broadcast, no intelligence
Switch → MAC based, fast
Router → IP based, connects networks
Gateway → Protocol conversion

5) HTTP

• Stateless protocol
• Uses TCP (Port 80)
• Methods: GET, POST, PUT, DELETE
• Status codes: 200 OK, 404 Not Found, 500 Server Error

TCP 3■Way Handshake (Diagram)

Client	→ SYN →	Server
Client	← SYN■ACK ←	Server

Client	→ ACK →	Server

6) Error Detection

• Parity Check – Simple
• Checksum – Used in TCP/UDP
• CRC – Most powerful

7) Routing

• Static Routing – Manual
• Dynamic Routing – RIP, OSPF, BGP
• RIP → Distance Vector
• OSPF → Link State

---- END OF QUICK REVISION ----