

# IBPS RRB MAINS COMPUTER 25 SEPTEMBER 2018

## OSI & TCP - IP MODEL

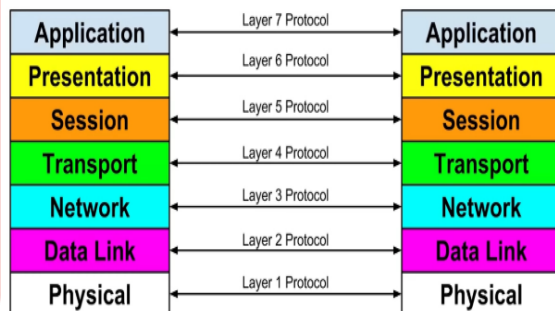
- About OSI Model.
- OSI Model - 7 Layers.
- 7 Layers Sequence - Learning Trick.
- 7 Layers Explanation - With Example.
- 7 Layers Explanation - With Facts.
- Data Link Layer - Types.
- OSI Model - PDU (Presentation Data Unit).
- OSI Model - Protocols, Devices, Address.

TCP/IP Model - About, Layers, Comparison with OSI.

### About OSI Model

- OSI stands for - Open Systems Interconnection
- Developed by- ISO (International Organization for Standardization).
- OSI model is a tool used by IT professionals to actually trace the flow of- How data transfers in networks.
- It is a reference model or conceptual model.
- This model is not practically implemented.
- OSI model contains - 7 Layers.
- Layers follow a set of rules, called protocol.

### OSI Reference Model: 7 Layers



### Short Trick To Learn : 7 Layers



**AP ST Next De Payenge...!!**

**आप ST नेक्स्ट दे पाएंगे...!!**

### Easy Way To Learn: 7 Layers Working

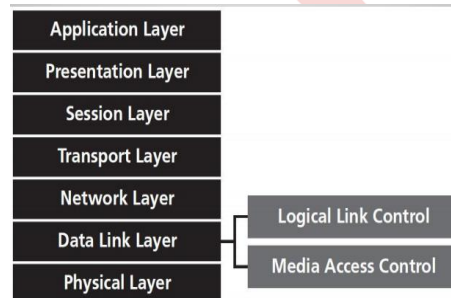
- |                |   |
|----------------|---|
| 7 Application  | 500 रूपए देने है-Mathew को और एक Letter भी देना है।   |
| 6 Presentation | Letter हिंदी में है, उसे English में ट्रांसलेट कर लेना।                                     |
| 5 Session      | Call करके बता दिया Mathew को, जब मिल जाये तो बता देना।                                      |
| 4 Transport    | 500/- मिल गये Driver के द्वारा।   |
| 3 Network      | 5 Envelope बनाये, 100/-100/- के।  |
| 2 Data Link    | Envelope के ऊपर To & From लिख दिया।   |
| 1 Physical     | Envelope अच्छे से बंद कर के Seal लगा दी गयी।<br>Driver को दे दिया Mathew तक पहुंचने के लिए। |

## OSI Reference Model: 7 Layers

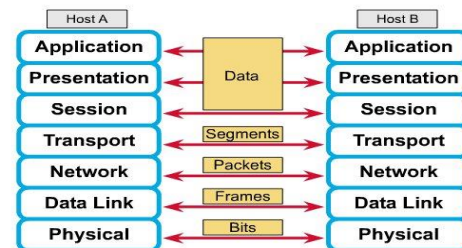
- |                |   |
|----------------|---|
| 7 Application  | → (User से User Interaction.) - All applications / Software work in this layer + Protocol used- http, ftp, telnet, smtp |
| 6 Presentation | → Translate (Extension) + Compress + Encrypt  |
| 5 Session      | → Session Create, Manage & Close + Mail send successfully message   |
| 4 Transport    | → Segmentation + TCP (No Loss) / UDP (May Loss) + Port address + Point to Point Connection.                             |
| 3 Network      | → Router + IP Address (Source IP To Destination IP)   |
| 2 Data Link    | → Error Detection & Correction + MAC Address (Source MAC To Destination MAC)  |
| 1 Physical     | → Wired / Wireless medium + Topology + Transmission Mode  |

Error Detection & Correction + MAC Address (Source MAC To Destination MAC)

Wired / Wireless medium + Topology + Transmission Mode



### Peer-to-Peer Communications



### OSI Model: Protocols Used

- |                |  |
|----------------|--|
| 7 Application  | → HTTP + FTP + Telnet + SMTP                       |
| 6 Presentation | → SSL + TLS + MIME + (ASCII, MPEG, JPEG, PNG, MP3) |
| 5 Session      | → PPTP + NetBIOS                                   |
| 4 Transport    | → TCP + UDP  |
| 3 Network      | → IP (IPv-4, IPv-6)                                |
| 2 Data Link    | → ATM + ARP + SLIP + PPP                           |
| 1 Physical     | → None   |

### OSI Model:About Protocols

Application	Description
DHCP	Dynamic Host Configuration Protocol assigns IP addresses
DNS	Domain Name System translates website names to IP addresses
HTTP	Hypertext Transfer Protocol used to transfer web pages
NBNS	NetBIOS Name Service translates local host names to IP addresses
SMTP	Simple Mail Transfer Protocol sends email messages
SNMP	Simple Network Management Protocol manages network devices
SNTP	Simple Network Time Protocol provides time of day
Telnet	Bi-directional text communication via a terminal application
TFTP	Trivial File Transfer Protocol used to transfer small amounts of data

## OSI Model:About Protocols

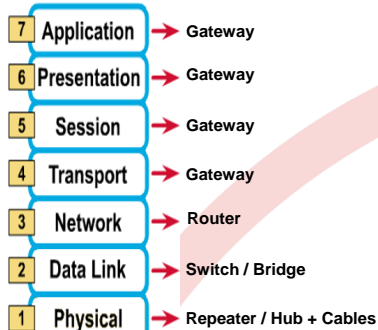
**ARP- Address Resolution Protocol.**

- IP Address is known, find the MAC Address.

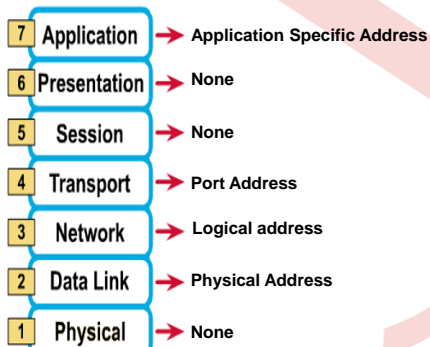
**RARP- Reverse Address Resolution Protocol.**

- MAC Address is known, find the IP Address.

## OSI Reference Model: Devices Used



## OSI Model: Address Used

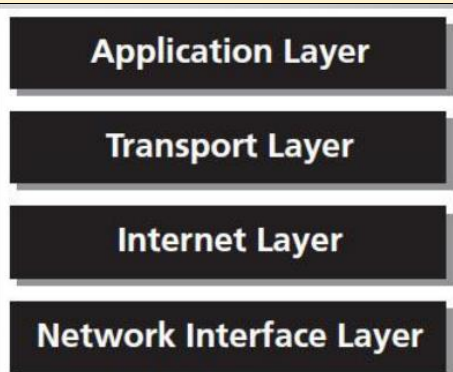


## About TCP/IP Model

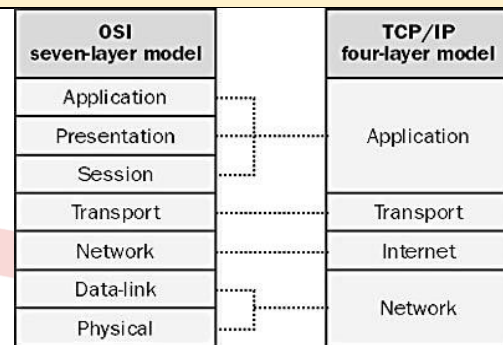
- TCP/IP means- Transmission Control Protocol and Internet Protocol.
- Developed by- Department of Defence's Project Research Agency (ARPA, later DARPA).
- The TCP/IP model is a concise version of the OSI model.

TCP/IP model was developed prior the OSI model.

## TCP/IP Model

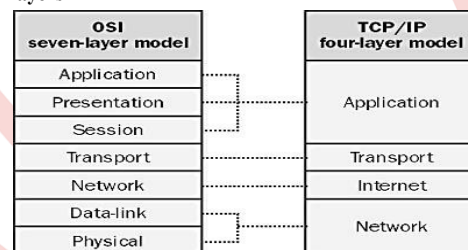


## TCP/IP Model Vs OSI Model

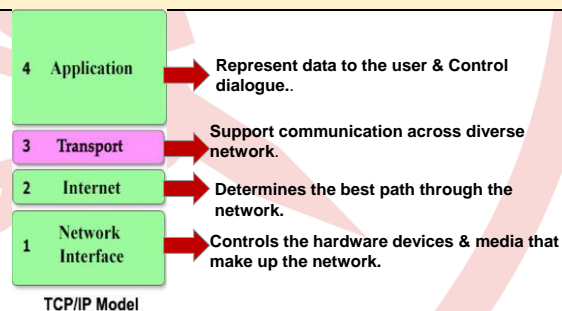


## TCP/IP Model Vs OSI Model

- Network Interface layer = MAC: Data Link Layer + Physical layer (OSI Model).
- Internet layer = Network layer + LLC: Data Link layer (OSI Model).
- Transport Layer = Transport Layer (OSI Model).
- Application Layer = Application + Presentation + Session layers



## TCP/ IP Model Vs OSI Model



## Comparison-TCP/IP & OSI

TCP/IP	OSI
TCP refers to Transmission Control Protocol.	OSI refers to Open Systems Interconnection.
TCP/IP has 4 layers.	OSI has 7 layers.
TCP/IP is more reliable	OSI is less reliable
TCP/IP does not have very strict boundaries.	OSI has strict boundaries
TCP/IP follow a horizontal approach.	OSI follows a vertical approach.
TCP/IP uses both session and presentation layer in the application layer itself.	OSI uses different session and presentation layers.
TCP/IP developed protocols then model.	OSI developed model then protocol

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