

Telecom Industry Interview Questions And Answers Guide.



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Telecom Industry Job Interview Preparation Guide.

Question # 1

What is cdma technology?

Answer:-

CDMA means Code Division Multiple access.

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Question # 2

What is the difference between collision domain and broadcast domain?

Answer:-

Collision domain is the group of hosts in which collision can occur but broadcast domain consists of all the groups of hosts that can proceed the broadcast frame. Broadcast domain may be collision domain but Collision domain may not be broadcast domain

A collision domain is an Ethernet term used to describe a network, collection of devices in which one particular device sends a packet on a network segment.

A broadcast domain is where a set of all device on that same segment hear all broadcasts sent on that segment.

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Question # 3

Why the RSL of microwave link is in -ive?

Answer:-

RSL is very low due to fading and other path losses. Hence when signal is received at REceiver it is very low. To amplify this low signal LNA is used as first stage amplifier in all the receivers.

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Question # 4

What is the purpose of GSM DEVISE AND WHAT IS GPRS?

Answer:-

GSM is a circuit switched network which is used for voice call. for data call we use GPRS. Gprs uses network elements of gsm but it has two additional nodes (SGSN, GGSN). by using these two nodes we can connect to PDN (packet data network) and make packet call (downloadig)

data speeds of gsm 13kb/s

while in gprs 171kb/s

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Question # 5

What is FREQUENCY BAND for 3G?

Answer:-

In india its 1920-1980

and 2110-2170 MHZ

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Question # 6

In GSM we use MSRN for routing but what parameter is used in CDMA for routing?

Answer:-

In Gsm We use routing number towards the calling subscriber and tidn towards the calling subscriber , but in cdma the subscriber will not be allocated any routing number for the internal routing, i.e.. for the intra cell or intra msc routing there will be no token issued, but for the inter msc there will be token only towards called party.

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Question # 7

What is the difference between FER and BER?

Answer:-

Error ratios used in conjunction with GSM speech channels:

Â· Frame Erasure Rate, FER, is defined as the amount of swept speech frames (260 bits each) divided by the amount of transmitted speech frames. The speech frame is swept if even one of its most important 50 bits is observed not to be correct. The three parity bits following the 50 class Ia bits are used for error detection.

Â· Bit Error Rate, BER, is the ratio of erroneously received bits to all received bits. It is important to notice that BER is evaluated before channel decoding, i.e. after equaliser. BER is used for defining the RXQUAL value

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Question # 8

What is the total output power of a complete BTS, in dbm and watts?

Answer:-

43dbm/20 Wattb but this the output pwr of TRX So Total o/p pwr of BTS depends on no. of TRX and also no. of combiner used

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Question # 9

What was CDMA origin?

Answer:-

It was originated at USA.

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Question # 10

What is BTS? What are its different configurations and what is the power consumption/peak current for each of these types of BTS?

Answer:-

BTS abbreviated for Base Transiever Station is a collection of transmission and reception card designed for routing of signals from end user to msc and vice versa. There are many types of BTS depending on the manufacturing companies viz nokia,ericsson, zte,huwai etc ...i've worked on a few so can tell u about them in nokia there is practically 2,2,2/4,4,4/8,8,8 configuration but this may vary depending upon the traffic requirement of the circle. mostly composite configurations are used, like 2,3,3 or 2,2,4 etc.

these nos are nothing but no of trx cards in each sector , for example 2,2,2 is 2 trx cards in each of three sectors.

power consumption also is different for each type of BTS, for NOKIA's Flexi indoor BTS running on 222 config power requiremnt will be approx 48 watts per hour typically on every BTS 48V is supplied with negative polarity.

feel free to mail me for any further doubts

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Question # 11

What is snmp protocol? How is snmp work with NMS and EMS?

Answer:-

SNMP is based on the manager/agent model consisting of an SNMP manager, an SNMP agent, a database of management information, managed SNMP devices and the network protocol. The SNMP manager provides the interface between the human network manager and the management system. The SNMP agent provides the interface between the manager and the physical device(s) being managed.

The SNMP manager and agent use an SNMP Management Information Base (MIB) and a relatively small set of commands to exchange information. The SNMP MIB is organized in a tree structure with individual variables, such as point status or description, being represented as leaves on the branches. A long numeric tag or object identifier (OID) is used to distinguish each variable uniquely in the MIB and in SNMP messages.

SNMP uses five basic messages (GET, GET-NEXT, GET-RESPONSE, SET, and TRAP) to communicate between the SNMP manager and



the SNMP agent. The GET and GET-NEXT messages allow the manager to request information for a specific variable. The agent, upon receiving a GET or GET-NEXT message, will issue a GET-RESPONSE message to the SNMP manager with either the information requested or an error indication as to why the request cannot be processed. A SET message allows the SNMP manager to request a change be made to the value of a specific variable in the case of an alarm remote that will operate a relay. The SNMP agent will then respond with a GET-RESPONSE message indicating the change has been made or an error indication as to why the change cannot be made. The SNMP TRAP message allows the agent to spontaneously inform the SNMP manager of an "important" event.

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Question # 12

Explain BTS configuration 4+2+2?

Answer:-

as per the utilization of sector, we can configure the sectors a,b,c like below combination...
if 1st sector utilization is high 4+2+2
if 2nd sector utilization is high 2+4+2
if 3rd sector utilization is high 2+2+4

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Question # 13

What is the difference between NOC & NMS?

Answer:-

Network operation center (NOC). NOCs are responsible for monitoring the network for alarms like as power fail, Service affected alarm (site down, LAPD OML fault, TRX close HPA alarm etc) & communicate its field engineer to solved the problem. if need any support for software base they provide to recover the problem.

A Network Management System (NMS) is a combination of hardware and software used to monitor and administer a network. Communicate with NOC recover the Alarm.
NMS-->NOC-->Field Engineers=Solved the problem

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Question # 14

What do you mean by FDMA? Explain?

Answer:-

Frequency Division Multiple Access or FDMA is a channel access method used in multiple-access protocols as a channelization protocol. FDMA gives users an individual allocation of one or several frequency bands, or channels. Multiple Access systems coordinate access between multiple users. The users may also share access via different methods such as TDMA, CDMA, or SDMA. These protocols are utilized differently, at different levels of the theoretical OSI model. Disadvantage: Crosstalk which causes interference on the other frequency and may disrupt the transmission.

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Question # 15

How CDMA is different from GSM?

Answer:-

GSM is Global System For Mobile Communication. GSM uses Time Division Multiple Access means Ten persons in a meeting room and only speaks whenever their turn comes.

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Question # 16

Explain IPV4 and IPV6 address bit?

Answer:-

IPV6 is advanced version of IPV4.
the address of IPV⁶ is 128 bits with extend able memory and that of IPV⁴ is 32 bits.



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Question # 17

Explain GSM?

Answer:-

GSM, which stands for Global System for Mobile communications, reigns as the world's most widely used cell phone technology.

Cell phones use a cell phone service carrier's GSM network by searching for cell phone towers in the nearby area.

The origins of GSM can be traced back to 1982 when the Groupe Spéciale Mobile (GSM) was created by the European Conference of Postal and Telecommunications Administrations (CEPT) for the purpose of designing a pan-European mobile technology.

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Question # 18

Explain functional concept of gsm and cdma?

Answer:-

GSM/CDMA

1. CELL and Sector with multiple frequency / CDMA single frequency as carrier {users are get identifies by codes}
2. used TDMA and FDMA for Accesing /CDMA uses CDMA method
3. GSM is intial 2G technology with intial voice rate of 9.6kbps/same with 14.4kbps
- 4.GSM emerges into WCDMA/cdma emerges into cdma 2000
5. power control in acces method is comparitively not efficient (when compare to CDMA)/ cdma as PLL(phase locked loops for power transmission) better
- 6.call hand off and network hand off is not smoother in GSM/ CDMA follows soft handoff and handling call hence more efficient
7. GSM use less bandwidth and more power comparitively / CDMA uses less bandwidth and more power
- 8.cost wise for opeartor GSM is less costlier , but efficiency wise CDMA is better

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Question # 19

What is Difference between Router and Switch?

Answer:-

ROUTER interconnecting on layer 3, and SWITCH does it on layer 2.

ROUTER can access to different LANs, versus that the SWITCH can work only in the same LAN.

ROUTER changes the MAC addresses when pass from one LAN to another, versus that the SWITCH can't change it.

ROUTER do look on the IP address, versus that the SWITCH don't care form the IP address,

SWITCH look on IP address as regular Data inside the frame.

ROUTER is defining the border of Broadcast Domain; versus that SWITCH define the border of Collision Domain.

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Question # 20

Why the STMs in multiple of 1,4,16,64?

Answer:-

I think you have to study SDH network to understand the answer of this question.I am giving the formulae by which the STM-N is generated.

STM-64: 64 VC-4 or 16 VC-4-4c or 4 VC-4-16c or 1 VC-4-64c

STM-16: 16 VC-4 or 4 VC-4-4c or 1 VC-4-16c

STM-4: 4 VC-4 or 1 VC-4-4c

STM-1: 1 VC-4

Higher-level STM-N frames can be simplistically perceived as *4 multiples of a basic STM-1. An STM-4 is constructed by byte-interleaved multiplexing of 4 STM-1s into a frame that is 9 rows by 1080 columns wide. The STM-4 signal has a line rate of 622.080 Mbps (4 * 155.520 Mbps). The four STM-1s (STM-1(1), STM-1(2), STM-1(3), and STM-1(4)) are frame aligned before multiplexing. Frame alignment is achieved by ensuring that the first 12 bytes of the STM-4 signal are A1 framing bytes drawn from STM-1(1), the next 3 from STM-1(2), then 3 from STM-1(3), and finally 3 from STM-1(4). The 12 A1 framing bytes are followed by 12 A2 framing bytes that are obtained from the 4 STM-1s in a process, similar to the way that the A1 bytes were obtained.

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Question # 21

Which type antenna uses in mobile communication?

Answer:-

Pole Antenna-for local coverage.

Microwave Antenna-for point to point communication transceiver,in different area BTS communication...



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Question # 22

How CDMA works?

Answer:-

Each user is assigned a unique code and they can use the entire bandwidth available. It is like Ten persons in a meeting room are talking at the same time but with different languages.

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Question # 23

Explain call flow for roaming mobile to roaming mobile?(both users are belongs to same state but staying on roaming in different states)

Answer:-

If a Roaming Mobile A call to a roaming mobile B, SRI query will come to Home HLR, which then provides the exact MSC address of roaming Mobile B. MSC where Roaming mobile B present will provide a MSRN Which will be provided to MSC which is current serving Roaming Mobile A via HLR. MSRN will be used to route the Call.

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Question # 24

What is Crankback?

Answer:-

Crankback is a mechanism used by ATM networks when a connection setup request is blocked because a node along a selected path cannot accept the request. In this case, the path is rolled back to an intermediate node, which attempts to discover another path to the final destination

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Question # 25

Explain IP addresses range A,B,C,D,E?

Answer:-

Class A 1.0.0.1 to 126.255.255.254 Supports 16 million hosts on each of 127 networks.
Class B 128.1.0.1 to 191.255.255.254 Supports 65,000 hosts on each of 16,000 networks.
Class C 192.0.1.1 to 223.255.254.254 Supports 254 hosts on each of 2 million networks.
Class D 224.0.0.0 to 239.255.255.255 Reserved for multicast groups.
Class E 240.0.0.0 to 254.255.255.254 Reserved for future use, or Research and Development Purposes.

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Question # 26

What is the difference between Internet and ISDN?

Answer:-

Isdn is a type of data and internet service that makes use of digital signals running along existing copper lines to increase the data throughput, reduce line noise and enhance signal quality. Whereas, Internet is a packet-switched network of interconnected computers, enabling users to share information along multiple channels. Channels which can be made available by using ISDN for example! That makes the difference.

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Question # 27

What is Bridging?

Answer:-

Bridging is a forwarding technique used in packet-switched computer networks. Unlike routing, bridging makes no assumptions about where in a network a particular address is located. Instead, it depends on flooding and examination of source addresses in received packet headers to locate unknown devices. Once a device has been located, its location is recorded in a table where the MAC address is stored so as to preclude the need for further broadcasting. The utility of bridging



is limited by its dependence on flooding, and is thus only used in local area networks. Bridging generally refers to Transparent bridging or Learning bridge operation which predominates in Ethernet. Another form of bridging, Source route bridging, was developed for token ring networks.

A network bridge connects multiple network segments at the data link layer (Layer 2) of the OSI model. In Ethernet networks, the term bridge formally means a device that behaves according to the IEEE 802.1D standard. A bridge and switch are very much alike; a switch being a bridge with numerous ports. Switch or Layer 2 switch is often used interchangeably with bridge.

Bridges are similar to repeaters or network hubs, devices that connect network segments at the physical layer (Layer 1) of the OSI model; however, with bridging, traffic from one network is managed rather than simply rebroadcast to adjacent network segments. Bridges are more complex than hubs or repeaters. Bridges can analyze incoming data packets to determine if the bridge is able to send the given packet to another segment of the network.

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Question # 28

What kind of internet speed control facilities (exact name) do internet service provider use and is it possible to check internet speed of each individual consumer like speedtest.net does?

Answer:-

Here we need to make a server and check individual internet speed of each consumer using our services.

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Question # 29

What is the CDR format generated by ZTE NEs?

Answer:-

Comma Separated

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Question # 30

Explain gsm call flow for MS to SMS? and GSM call flow from MS to roaming MS?

Answer:-

First SMS is submitted to SMSC, then it is forwarded from there to SMS gateway. SMS Gateway retrieves Routing info from HLR and send it to MSC. MSC gets current location from VLR of recipient mobile and delivers Msg.

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Question # 31

What is RRC States in Umts?

Answer:-

There are four RRC states present in UMTS .

- 1.CELL_DCH STATE
- 2.CELL_FACH STATE
- 3.CELL_PCH STATE
- 4.URA_PCH STATE

WHEN MOBILE IS MOVING FROM IDLE MODE TO DEDICATED MODE AND DATA TRANSMISSION IS OF LARGE AMOUNT OF DATA THEN CELL_DCH STATE COMES IN TO PICTURE .

IF DATA TRANSMISSION IS OF SMALL AMOUNT OF DATA THEN

CELL_FACH STATE WILL COME IN TO PICTURE

WHEN MOBILE IS MOVING FROM ONE CELL TO ANOTHER CELL IT

SHOULD PERFORM HANDOVER THEN MOBILE RRC STATE WILL BE IN CELL_PCH STATE.

URA MEANS UTRAN REGISTRATION AREA

THE AREA COVERED BY ONE RNC IS KNOWN AS URA

SO WHEN MOBILE IS MOVING FROM URA AREA TO ANOTHER URA AREA

THEN LOCATION UPDATION SHOULD PERFORM THEN MOBILE RRC STATE COMES TO URA_PCH STATE .

THESE ARE THE FOUR RRC STATES PRESENT IN UMTS NETWORK

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