Unit-1 Wireless Transmission

Short Questions:

1. Give definition of signal.
2. What is the Transmission range for signal propagation?
3. What is the Detection range for signal propagation?
4. What is the Interference range for signal propagation?
5. What do you mean by multiplexing?
6. What is the path loss of radio signal?
7. What do you mean by shadowing of radio signal?
8. Write reason why baseband signal cannot be directly transmitted in wireless system.
9. What are short term and long term fading?
10. List out types of multiplexing.
11. What is digital modulation?
12. What are the features of TDMA?
13. Write any two advantages of MSK over QPSK.

Long Question:

1. Differentiate "amplitude" and "phase" shift keying.
2. Explain space division multiplexing with proper diagram.
3. Explain the signal propagation in wireless system.
4. Explain frequency division multiplexing with proper diagram.
5. Describe the frequencies for radio transmission.
6. Draw figure of multi path propagation and explain it.
7. Explain time division multiplexing with proper diagram.
8. Explain the addition signal propagation effects.
9. Explain code division multiplexing with proper diagram.
10. Explain the advance phase shift keying.

Multiple Choice Questions:

1. In which rage digital audio broadcasting(DAB) take place
   a) Medium Frequency (MF) and High Frequency (HF)
   b) Very High Frequency (VHF) and Ultra High Frequency (UHF)
   c) Super High Frequencies (SHF) and Extremely High Frequency (EHF)
   d) None of above
2. AM stands for
   a) Amplitude Modulation
   b) Analog Microwaves
   c) None of above
   d) Amplifying Microphone
3. Signals with a frequency below 2 MHz use _____ propagation.
   a) Ground   b) Sky
   c) line-of-sight   d) none of the above
4. _____ are used for short-range communications such as those between a PC and a peripheral device.

a)   Radio waves   b)   Microwaves
c)   Infrared waves   d)   none of the above
5.   Before data can be transmitted, they must be transformed to _____.
a)   periodic signals   b)   electromagnetic signals
c)   aperiodic signals   d)   low-frequency sine waves
6.   In a frequency-domain plot, the horizontal axis measures the _____.
a)   peak amplitude   b)   frequency
c)   phase   d)   slope
7.   In a time-domain plot, the horizontal axis is a measure of _____.
a)   signal amplitude   b)   frequency
c)   phase   d)   time
8.   Data can be _____.
a)   analog   b)   digital
c)   (a) or (b)   d)   none of the above
9.   When propagation speed is multiplied by propagation time, we get the _____.
a)   throughput   b)   wavelength of the signal
c)   distortion factor   d)   distance a signal or bit has traveled
10.   ASK, PSK, FSK, and QAM are examples of _____ conversion.
a)   digital-to-digital   b)   digital-to-analog
c)   analog-to-analog   d)   analog-to-digital
11.   _____ conversion is the process of changing one of the characteristics of an analog signal based on the information in the digital data.
a)   Digital-to-analog   b)   Analog-to-analog
c)   Analog-to-digital   d)   Digital-to-digital
12.   Which of the following is not a digital-to-analog conversion?
a)   ASK   b)   PSK   c)   FSK   d)   AM
13.   In _____, the amplitude of the carrier signal is varied to create signal elements. Both frequency and phase remain constant.
a)   ASK   b)   PSK   c)   FSK   d)   QAM
14.   The _____ technique expands the bandwidth of a signal by replacing each data bit with n bits.
a)   FDM   b)   DSSS   c)   FHSS   d)   TDM
15.   In _____, the frequency of the carrier signal is varied to represent data. Both peak amplitude and phase remain constant.
a)   ASK   b)   PSK   c)   FSK   d)   QAM
16.   In _____, the phase of the carrier is varied to represent two or more different signal elements. Both peak amplitude and frequency remain constant.
a)   ASK   b)   PSK   c)   FSK   d)   QAM
17.   The constellation diagram of 16-QAM has _____ dots.
a)   4   b)   16   c)   8   d)   none of the above
18.   AM and FM are examples of _____ conversion.
a)   digital-to-digital   b)   digital-to-analog
c)   analog-to-analog   d)   analog-to-digital

19. _____ is the set of techniques that allows the simultaneous transmission of multiple signals across a single data link.
    a) Demodulating   b) Multiplexing
    c) Compressing   d) None of the above

20. _____ is designed to be used in wireless applications in which stations must be able to share the medium without interception by an eavesdropper and without being subject to jamming from a malicious intruder.
    a) Spread spectrum   b) Multiplexing
    c) Modulation   d) None of the above.

21. The _____ technique uses M different carrier frequencies that are modulated by the source signal. At one moment, the sign modulates one carrier frequency; at the next moment, the signal modulates another carrier frequency.
    a) FDM   b) DSSS   c) FHSS   d) TDM

True False:

1. For traditional wired networks, frequencies of up to several hundred kHz are used for distances up to some km with twisted pair copper wires.

2. Very high frequencies (VHF) are typically used for directed microwave links.

3. For wired networks, frequencies of several hundred MHz are used with twisted pair copper wires.

4. Conventional analog TV is transmitted using the very high frequency (VHF) and ultra high frequency (UHF) bands.

5. Waves in the very low frequency (VLF) range are used by submarines.

6. Representations in the time domain are not problematic if a signal consists of many different frequencies.

7. A more flexible multiplexing scheme for typical mobile communications is time division multiplexing (TDM).

8. The mobile phone standard GSM uses this combination of space and time division multiplexing..

9. While light is not very reliable due to interference.

10. Infra red (IR) transmission is used for indirected links.

Fill in the blanks:

1. _____ are needed for the transmission and reception of waves.

2. In _____ modulation, data has to be 'translated' into a signal with a certain carrier frequency.

3. Waves in the _____ range are used by submarines.

4. Super high frequencies (SHF) are typically used for _____ links.

5. _____ channel allocation is used in the GSM system

6. The frequency f expresses the periodicity of the signal with the period T= _____.

7. A tool to display frequencies is a_____.

8. _____ are needed to avoid frequency band overlapping.

9. In free space radio signals propagate as light in straight line exists between a sender and a receiver it is called _____.

10. In _____multiplexing, all senders need precise clocks or, alternatively.

11.   Many international broadcasts and amateur radio use these _____ waves .

12.   Signals travelling along different paths with different lengths arrive at the receiver at different times. This effect is called as_____.

13.   _____effect occurs because the velocity of the electromagnetic waves depends on the density of the medium through which it travels.

14.

15.   In wireless transmission, _____ implies a separate sender for each communication channel with a wide enough distance between senders.

16.   _____describes schemes to subdivide the frequency dimension into several non-overlapping frequency bands.

17.   _____ used in military applications due to its inherent security features.

18.   The main advantage of CDM for wireless transmission is that it gives good protection against _____.

19.   _____ Waves with low frequencies follow the earth's surface and can propagate long distances.

20.   A dynamic channel allocation (DCA) scheme has been implemented in _____.

Unit-2 Medium Access Control

Short Question:
   1. What is multiple access?
   2. Write the applications of multiple access methods.
   3. Mention the types of multiple access techniques.
   4. What is the need of guard bands in FDMA?
   5. Write the nonlinear effects in FDMA.
   6. Write the expression for number of channels used in FDMA system.
   7. What is frame efficiency in TDMA?
   8. Write the expression for frame efficiency in TDMA?
   9. What is spreading signal in CDMA?
   10. Define near far problem in CDMA.
   11. Define self jamming problem in CDMA
   12. What is FDM?
   13. What is hopping sequence?
   14. What are the two types of hopping sequence?

Long Questions

   1. Explain Motivation for a specialized MAC.
   2. How carrier sense multiple access with collision detection(CSMA/CD) works?
   3. Hidden and exposed terminals using proper example.
   4. Explain near and far terminals using proper example.
   5. Explain in detail: SDMA.
   6. Explain in detail the TDMA multiple access techniques.
   7. Explain demand assignment multiple access with explicit reservation.

8. What are the advantages of a fixed TDM pattern compared to random, demand driven TDM?
9. Explain in detail the FDMA multiple access techniques.
10. Explain how MACA can avoid hidden terminals problem.
11. Explain reservation TDMA.
12. Describe Slotted Aloha in detail.
13. Explain behavior of CDMA together with the DSSS spreading using orthogonal codes using proper example.
14. Explain spread aloha in detail.

Multiple Choice Questions

1. In _____ each station sends a frame whenever it has a frame to send.
   a) pure ALOHA   b) slotted ALOHA
   c) both (a) and (b)   d) neither (a) nor (b)

2. In pure ALOHA, the vulnerable time is _____ the frame transmission time.
   a) the same as   b) two times
   c) three times   d) none of the above

3. The maximum throughput for pure ALOHA is _____ per cent.
   a) 12.2   b) 18.4
   c) 36.8   d) none of the above

4. In _____, each station is forced to send only at the beginning of the time slot.
      pure ALOHA
      a) slotted ALOHA
      b) both (a) and (b)
      c) neither (a) nor (b)

5. In slotted ALOHA, the vulnerable time is _____ the frame transmission time.
      a) the same as
      b) two times
      c) three times
      d) none of the above

6. The maximum throughput for pure ALOHA is _____ per cent.
      a) 12.2   b) 18.4
      c) 36.8   d) none of the above

7. The vulnerable time for CSMA is the _____propagation time.
      a) the same as
      b) two times
      c) three times
      d) none of the above

8. In the _____ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle.
      a) nonpersistent
      b) 1-persistent
      c) p-persistent
      d) none of the above

9. We have categorized access methods into _____ groups.
      a) two

b) three
c) four
d) five

10. In _____ methods, no station is superior to another station and none is assigned the control over another.
   a) random access
   b) controlled access
   c) channelization
   d) none of the above

11. _____ requires that each station first listen to the medium before sending.
   a) MA
   b) CSMA
   c) FDMA
   d) CDMA

12. _____ augments the CSMA algorithm to detect collision.
   a) CSMA/CA
   b) CSMA/CD
   c) either (a) or (b)
   d) both (a) and (b)

13. In the _____ method, time is divided into intervals. In each interval, a reservation frame precedes the data frames sent in that interval.
   a) reservation
   b) polling
   c) token passing
   d) none of the above

14. In _____, the available bandwidth is divided into frequency bands.
   a) FDMA
   b) TDMA
   c) CDMA
   d) none of the above

15. In _____, each station transmits its data in its assigned time slot.
   a) FDMA
   b) TDMA
   c) CDMA
   d) none of the above

16. In _____, the sequences are generated using orthogonal codes such the Walsh tables.
   a) FDMA
   b) TDMA
   c) CDMA
   d) none of the above

True/False

1. The near/far effect is a severe problem of wireless networks using FDM.
2. In p-persistent CSMA, stations sense the carrier and start sending immediately if the medium is idle.
3. CSMA with collision avoidance (CSMA/CA) is one of the access schemes used in wireless LANs

following the standard IEEE 802.11.

4. demand assigned multiple access (DAMA) also called slotted Aloha
5. FDM is often used for simultaneous access to the medium by base station and mobile station in cellular networks.
6. The simple Aloha works fine for a light load and does not require any complicated access mechanisms.
7. Aloha neither coordinates medium access nor does it resolve contention on the MAC layer.
8. Inhibit sense multiple access (ISMA) is known as Multiple access with collision avoidance (MACA)
9. CSMA/CD is an explicit reservation scheme.
10. An even more fixed pattern that still allows some random access is exhibited by fixed TDMA
11. Code division multiple access (CDMA) systems use exactly these codes to separate different users in code space
12. CDMA can be used in combination with FDMA/TDMA access schemes to increase the capacity of a cell
13. Multiple accesses with collision avoidance (MACA) presents a simple scheme that solves the hidden terminal problem.
14. From base station to mobile station or from satellite to ground control is known as uplink
15. Basic Aloha is sensing the carrier before accessing the medium is known as CSMA

Fill in the Blanks

1. In _____, stations sense the carrier and start sending immediately if the medium is idle.
2. _____is a severe problem of wireless networks using CDM
3. Demand assigned multiple access (DAMA) also called _____.
4. _____ is a strictly centralized scheme with one master station and several slave stations.
5. Classical Aloha scheme is provided by the introduction of time slots is known as_____
6. _____ that solves the hidden terminal problem.
7. Combinations of_____ with only a single code, is called spread Aloha multiple access (SAMA)
8. _____is used for allocating a separated space to users in wireless networks.
9. Inhibit sense multiple access (ISMA) is known _____.
10. Frequencies are also known as _____if base station to mobile station or from satellite to ground control is known as _____
11. CDMA can be used in combination with _____ and _____ access schemes to increase the capacity of a cell
12. An even more fixed pattern that still allows some random access is exhibited by _____.
13. _____is one of the access schemes used in wireless LANs following the standard IEEE 802.11.

Unit-3 Telecommunication System

Short Questions

1. What is the function of NSS in GSM?
2. Write types of TCH channels of GSM?
3. Define A Interface
4. List out subsystem of GSM.
5. Define term Base station subsystem (BSS).
6. What is Base transceiver station (BTS).
7. Define Base station controller (BSC).
8. What is Mobile station
9. What are the functions of VLR?
10. What are functions of equipment identity register?
11. What is the function of Operation and maintenance center in GSM
12. Define term MSISDN.
13. List out types of handover.
14. Define term HSCSD
15. List out four possible handover scenarios in GSM.
16. Which security services offered by GSM.

Long Question

1. Explain in detail the Mobile services.
2. Write short note on Bearer services.
3. Explain radio sub system (RSS)
4. Explain GSM structuring of time using a frame hierarchy.
5. Explain network and switching subsystem (NSS)
6. Explain operation subsystem (OSS).
7. Draw figure of functional architecture of a GSM system and explain.
8. Explain Control channels (CCH) of GSM.
9. Explain the need to locate an MS and to address the MS.
10. Explain Message flow for MTC and MOC.
11. Explain handover procedures, for Cellular systems.
12. Explain Authentication process in GSM.
13. Explain Encryption process in GSM.

Multiple Choice Questions

1. GSM includes HLR and VLR databases. Their uses may be described as:
   a) a VLR copies all relevant information for a user from the HLR every time a user moves from one cell to another.
   b) every time a user moves into a location area of a different MSC, all relevant user information is copied from the VLR to the HLR associated with the new MSC.
   c) every time a user moves into the location area of a different MSC, all relevant user

information is copied from the HLR to the VLR associated with the new MSC.
  d) the contents of HLR's and VLR's is always the same.

2. GSM is a digital cellular phone system using _____.
   a) FDMA
   b) TDMA
   c) CDMA
   d) both (a) and (b)

3. An acronym, BTS which forms part of a base station subsystem is?
   a) Basic Transmission Signal
   b) Broadband Throughput Station
   c) Broadcast Transmission Standard
   d) none of the above

4. Which of the following terms in a GSM network is where the details of a subscriber are kept?
   a) HTR
   b) HSR
   c) HLR
   d) none of the above

5. In a mobile station, which is not a crucial component to the receiver?
   a) Bandpass filter
   b) Low level RF amplifier
   c) RF mixer
   d) none of the above

6. The component of a GSM network which provides functionality needed to handle a mobile subscriber, such as registration, authentication, location updating, handovers etc is:
   a) Mobile services Switching Center (MSC)
   b) Subscriber Identity Module (SIM)
   c) Home Location Register (HLR)
   d) none of the above

7. The _____ are implemented as stand-alone nodes
   a) AUC
   b) EIR
   c) Both 1 & 2
   d) None of the above

8. The _____ is a database that contains information about the identity of mobile equipment that prevents calls from stolen, unauthorized, or defective mobile stations.
   a) EIR
   b) HLR
   c) AUC
   d) XME

9. The _____ protects network operators from different types of fraud found in today's cellular world.

a) EIR
b) AUC
c) XME
d) SMSC

10. Which of these performs such functions as toll ticketing, network interfacing, common channel signaling?

a) MSC
b) VLR
c) HLR
d) AUC

11. Location Area is an area covered by _____.

a) BTS
b) BSC
c) MSC
d) Operator

12. Which one of the following is the combination of main BCCH?

a) TCH+SACCH
b) FCH+SCH+BCH+CCCH
c) SDCCH/8+SACCH/8
d) FCH+SCH+BCH+SDCCH+SACCH

True/False

1. GSM permits the integration of different voice and data services
2. A mobile station MS is connected to the GSM public land mobile network (PLMN) via the A_{bis} interface.
3. Dummy burst is used if data is available for a slot.
4. The BTS sends information for frequency correction via the frequency correction channel (FCCH)
5. To avoid frequency selective fading, GSM specifies an optional slow frequency hopping mechanism.
6. The VLR always contains information about the current location
7. VLR currently responsible for the MS informs the HLR about location changes.
8. The OMC monitors and controls all other network entities via the A interface
9. Common AuC has been defined to protect user identity and data transmission
10. The EIR is a database for all IMEIs,it stores all device identifications registered for this network.

Fill in the Blanks

1. _____services permit transparent and non-transparent, synchronous or asynchronous data transmission.
2. GSM is a typical _____ generation system

3. A mobile station MS is connected to the GSM public land mobile network (PLMN) via the _____.
4. Connection between the RSS and the NSS via the _____
5. _____ can form a radio cell
6. Connection between the NSS the OSS via the _____
7. _____ performs all functions necessary to maintain radio connections to an MS
8. _____ basically manages the BTSs.
9. BTS connected to MS via the _____
10. _____ perform multiplexes the radio channels onto the fixed network connections at the A interface.
11. _____ performs all network specific tasks like TDMA, FDMA, coding etc.
12. The "heart" of the GSM system is formed by the _____.
13. _____ are high-performance digital ISDN switches.
14. _____is the most important database in a GSM system as it stores all user-relevant information.

Unit-4 Wireless Local Area Network

Short Questions:

1. Define term: AP, STAi, BSSi, ESS.
2. What are physical layers of IEEE 802.11.
3. What is distributed foundation wireless medium access control (DFWMAC)
4. Draw the figure of Basic DFWMAC–DCF with several competing senders.
5. What is RTS and CTS.
6. Explain point coordination function.
7. Define Elimination-yield non-preemptive priority multiple access
8. What is ad-hoc piconets,
9. What is scatternet
10. What are the power state of Bluetooth device.

Long Questions

1. Explain IEEE 802.11 system architecture using figure.
2. Explain IEEE 802.11 Protocol architecture.
3. Explain in detail physical layer of IEEE 802.11.
4. Draw figure of IEEE 802.11 protocol architecture and explain.
5. Describe frequency hopping spread spectrum for IEEE 802.11.
6. Explain frame of the physical layer used with DSSS.
7. Explain three different parameters that define the priorities of medium access.
8. Explain basic DFWMAC-DCF using CSMA/CA.
9. Describe DFWMAC-DCF with RTS/CTS extension
10. Explain DFWMAC-PCF with polling
11. Write a note on MAC management

12. Explain User scenarios of Bluetooth
13. Explain Architecture of Bluetooth in detail.
14. Write short note on function of Link manager protocol.
15. Explain in detail about three state of Bluetooth device.
16. Describe Security of Bluetooth device.

Multiple Choice Questions

1. The original IEEE 802.11, has a data rate of _____Mbps.
   a) 11
   b) 22
   c) 6
   d) 1
2. In IEEE 802.11, the access method used in the PCF sublayer is _____.
   a) polling
   b) controlled
   c) contention
   d) none of the above
3. In IEEE 802.11, a BSS without an AP is called an _____.
   a) an infrastructure network
   b) an ad hoc architecture
   c) either (a) or (b)
   d) neither (a) nor (b)
4. In IEEE 802.11, the addressing mechanism can include up to _____addresses.
   a) six
   b) five
   c) four
   d) none of the above
5. In Bluetooth, the _____ layer is roughly equivalent to the physical layer of the Internet model.
   a) baseband
   b) radio
   c) L2CAP
   d) none of the above
6. In IEEE 802.11, a station with _____ mobility is either stationary (not moving) or moving only inside a BSS.
   a) ESS-transition
   b) no-transition
   c) BSS-transition
   d) none of the above
7. In Bluetooth, the L2CAP sublayer, is roughly equivalent to the LLC sublayer in LANs.
   a) baseband
   b) L2CAP

c)   radio

d)   none of the above

8.   In IEEE 802.11, when a frame is going from one AP to another AP in a wireless distribution system, the address flag is _____.

a)   10

b)   01

c)   11

d)   00

9.   In IEEE 802.11, a BSS with an AP is sometimes referred to as _____.

a)   an infrastructure network

b)   an ad hoc architecture

c)   either (a) or (b)

d)   neither (a) nor (b)

10. In IEEE 802.11, the _____ is a timer used for collision avoidance.

a)   BSS

b)   ESS

c)   NAV

d)   none of the above

True/False

1.   The primary goal of the standard was the specification of a simple and robust WLAN which offers time-bounded and asynchronous services.

2.   Power management in infrastructure-based networks is much difficult compared to ad-hoc networks.

3.   The PHY management supports the association and re-association of a station to an access point and roaming between different access points.

4.   The MAC mechanisms are also called distributed foundation wireless medium access control (DFWMAC)

5.   station management interacts with both management layers and is responsible for additional higher layer functions

6.   The PHY layer offers a service access point (SAP) with 1 or 2 Mbit/s transfer rate to the MAC layer

7.   HIPERLAN 1 is not compatible with the standard MAC services known from IEEE 802.x LANs.

8.   A piconet is a collection of Bluetooth devices which are synchronized to the same hopping sequence.

9.   Many device in the piconet can act as master (M), all other devices connected to the master must act as slaves (S).

10. forming groups of piconets called scatternet.

11. A master periodically synchronizes with all slaves.

Fill in the Blanks

1. In IEEE 802.11, the access method used in the DCF sublayer is _____.
2. The RTS and CTS frames in CSMA/CA _____ solve the hidden station problem. The RTS and CTS frames in CSMA/CA _____ solve the exposed station problem.
3. In IEEE 802.11, communication between two stations in two different BSSs usually occurs via two _____.
4. Bluetooth is a _____ technology that connects devices (called gadgets) in a small area.
5. The original IEEE 802.11, uses _____.
6. The IEEE 802.11a, uses _____.
7. The access method in Bluetooth is _____.
8. The IEEE 802.11 wireless LANs use _____ types of frames.
9. In IEEE 802.11, _____ is an optional access method that can be implemented in an infrastructure network (not in an ad hoc network).
10. In IEEE 802.11, when a frame is coming from an AP and going to a station, the address flag is _____.
11. In Bluetooth, multiple _____ form a network called a _____.

Unit:5 Mobile Network Layer

Short Questions

1. List out the Requirements of mobile IP.
2. Define Entities for mobile IP.
3. How IP packet delivery is done.
4. List out the Agent discovery method.
5. Explain Agent advertisement and Agent solicitation.
6. Define term Tunneling and encapsulation.
7. What are four additional messages that optimized mobile IP protocol needs.
8. Explain advantage and disadvantage of HMIPv6.
9. What is Dynamic host configuration protocol?
10. List out fundamental differences between wired networks and ad-hoc wireless networks related to routing
11. Describe least interference routing (LIR).
12. List out three categories of routing protocol

Long Questions

1. What could be quick 'solutions' and why don't they work?

2. Name the requirements for a mobile IP and justify them.

3. Does mobile IP fulfill all requirements?

4. List the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice versa. Why and where is encapsulation needed?

5. How does registration on layer 3 of a mobile node work?

6. Explain packet flow if two mobile nodes communicate and both are in foreign networks.

7. What additional routes do packets take if reverse tunneling is required?

8. Discuss the advantages and disadvantages of IP-in-IP, minimal, and generic routing encapsulation.

9. Name the inefficiencies of mobile IP regarding data forwarding from a correspondent node to a mobile node. What are optimizations and what additional problems do they cause?

10. Name the main differences between multi-hop ad-hoc networks and other networks. What advantages do these ad-hoc networks offer?

11. Why is routing in multi-hop ad-hoc networks complicated, what are the special challenges?

12. Recall the distance vector and link state routing algorithms for fixed networks.

13. How does dynamic source routing handle routing?

14. What is the motivation behind dynamic source routing compared to other routing algorithms from fixed networks?

Multiple Choice Questions

1. Which protocol support mobility portability of equipment.
a) TCP
b) UCP
c) DHCP
d) LDAP
2. Which protocol map a logical name it IP address?
a) SMTP
b) TCP
c) DNS
d) DHCP
3. Which component continuously communicates with any other system in internet as long as data link layer is persistent?
a) home network
b) mobile node
c) foreign node
d) correspondent
4. _____ is the mechanism of taking a packet consisting of packet header and data and putting it into the data part of a new packet.
a) tunelling
b) Encapsulation

c) Decapsilation

d) none of the above

5. _____is an end-system or router that can change its point of attachment to the internet using mobile IP.

a) mobile node

b) Correspondent node

c) foreign node

d) none of above.

6. _____is the subnet the MN belongs to with respect to its IP address.

a) home network

b) Correspondent network

c) foreign network

d) none of above.

7. The _____ defines the current location of the MN from an IP point of view

a) care of network

b) care of address

c) correspondent address

d) none of the above

8. The _____ provides several services for the MN and is located in the home network.

a) home node

b) foreign address

c) home address

d) none of the above

9. foreign agents and home agents advertise their presence periodically using special _____messages.

a) foreign agent advertisement

b) agent advertisement

c) home agent advertisement

d) none of the above

10. _____ allows the encapsulation of packets of one protocol suite into the payload portion of a packet of another protocol suite

a) Generic routing encapsulation (GRE)

b) IP-in-IP encapsulation

c) Minimal encapsulation

d) none of the above

True/False

1. The MN keeps its IP address and can continuously communicate with any other system in the internet

2. The foreign network is the current subnet the MN visits and which is the home network.
3. The HA can provide several services to the MN during its visit to the foreign network.
4. The COA defines the current location of the MN from an IP point of view.
5. One of the requirements of mobile IP was to support hiding the mobility of the MN.
6. The IP destination address according to standard router advertisements can be set to 224.0.0.1, which is the multicast address for all systems on a link
7. The IP destination address according to standard router advertisements can be set to the broadcast address 255.255.255.253.
8. Preference levels for each address help a node to choose the router that is the most
9. Distance vector routing is used as routing information protocol (RIP) in wired networks.
10. Destination sequence distance vector (DSDV) routing is an enhancement to distance vector routing for ad-hoc networks
11. Flat ad-hoc routing protocols comprise those protocols that do set up hierarchies with clusters of nodes, special nodes acting as the head of a cluster

Fill in the Blanks

1. The _____ is the subnet the MN belongs to with respect to its IP address.
2. The _____ is the current subnet the MN visits
3. The COA defines the current location of the _____ from an IP point of view.
4. These advertisement messages can be seen as a _____into the subnet.
5. The home address is the _____IP address of the MN, home agent is the IP address of the HA
6. _____ is the mechanism of taking a packet consisting of packet header and data and putting it into the data part of a new packet.
7. _____tries to keep micro-mobility support as transparent as possible for both home agents and mobile nodes
8. DHCP is based on a _____
9. DSDV now adds two things_____ and _____ to the distance vector algorithm
10. Dynamic source routing (DSR), therefore, divides the task of routing into two separate problems as _____and _____.
11. The locationaided routing protocol (LAR, Ko, 2000) is similar to _____, but limits route discovery to certain geographical regions.
12. _____will be a major source of care-of-addresses needed for mobile IP.

Unit:6 Mobile Transport Layer

Short Questions

1. Define term I-TCP.
2. Define handover in I-TCP.

3. Why I-TCP needed?.
4. What is Two part in I-TCP.
5. What is access point.
6. What is snooping –TCP.
7. How snooping TCP is transparent?
8. How end to end TCP semantic is preserved?
9. How handover problem is solved by snooping TCP?
10. List out advantage of M-TCP.
11. What is supervisory host?
12. Why M-TCP needs a bandwidth manager?

Long Questions

1. Explain I-TCP using proper figure.
2. Explain handover in I-TCP with figure.
3. Describe advantage and disadvantage of I-TCP.
4. Explain snooping-TCP using proper figure.
5. Describe advantage and disadvantage of snooping-TCP.
6. Explain M-TCP using proper figure.
7. Describe advantage and disadvantage of M-TCP.
8. Compare I-TCP , Snooping TCP and M-TCP.

Multiple Choice Questions

1. _____ segments a TCP connection into a fixed part and wireless part.
   a) I-TCP
   b) M-TCP
   c) Both
   d) None of the above

2. Instead of the mobile host, the access point now terminates the standard TCP connection, acting as a _____
   a) Foreign agent
   b) Wireless node
   c) Proxy
   d) None of the above

3. A good place for segmenting the connection between mobile host and correspondent host is at _____ of mobile IP
   a) Home agent
   b) Foreign agent
   c) Proxy server
   d) None of the above

4. _____does not require any changes in the TCP protocol as used by the hosts in the fixed network or other hosts in a wireless network
   a) I-TCP

b) Snooping TCP
c) M-TCP
d) None of the above

5. Disadvantage of _____ is loses the original end-to-end TCP semantic.
   a) I-TCP
   b) M-TCP
   c) Both
   d) None of the above

6. In _____approach, the foreign agent buffers all packets with **destination mobile host**
   a) I-TCP
   b) Snooping TCP
   c) M-TCP
   d) None of the above

7. In which the end-to-end TCP semantic is preserved.
   a) I-TCP
   b) Snooping TCP
   c) M-TCP
   d) None of the above

8. In which classical TCP is to prevent the sender window from shrinking if bit errors or disconnection but not congestion cause current problems.
   a) I-TCP
   b) Snooping TCP
   c) M-TCP
   d) None of the above

9. _____wants to improve overall throughput, to lower the delay, to maintain end-to-end semantics of TCP, and to provide a more efficient handover.
   a) I-TCP
   b) Snooping TCP
   c) M-TCP
   d) None of the above

10. M-TCP needs a _____to implement fair sharing over the wireless link.
    a) Proxy server
    b) Bandwidth manager
    c) Foreign agent
    d) None of the above

11. _____ maintains the TCP end-to-end semantics.
    a) I-TCP and M-TCP
    b) M-TCP and snooping TCP
    c) M-TCP
    d) None of the above

12. In which classical TCP, SH does not act as proxy

a) I-TCP
b) Snooping TCP
c) M-TCP
d) None of the above

True/False

1. Standard TCP is used between the unfixed computer and the access point.
2. I-TCP requires several actions as soon as a handover takes place.
3. M-TCP does not require any changes in the TCP protocol
4. Partitioning into two connections also allows the use of a different transport layer protocol between the foreign agent and the mobile host
5. The foreign agent must be a trusted entity because the TCP connections end at this point in M-TCP.
6. drawbacks of I-TCP is the segmentation of the single TCP connection into two TCP connections.
7. The end-to-end TCP semantic is preserved.
8. I-TCP does not need a handover of state as soon as the mobile host moves to another foreign agent.
9. The M-TCP (mobile TCP)1 approach has the same goals as I-TCP and snooping TCP

Fill in the Blanks

1. _____and _____ segments a TCP connection into a fixed part and a wireless part.
2. Instead of the mobile host, the access point now terminates the standard TCP connection, acting as a _____.
3. _____does not require any changes in the TCP protocol
4. In practical use, increased handover latency may be much more problematicin _____.
5. In _____ approach, the foreign agent buffers all packets with destination mobile host.
6. The _____ TCP semantic is preserved.
7. It does not need a handover of state as soon as the mobile host moves to another foreign agent.
8. _____ does not isolate the behavior of the wireless link as well as ITCP.
9. The _____ approach has the same goals as I-TCP and snooping TCP
10. _____ splits the TCP connection into two parts as I-TCP does.
11. M-TCP wants to improve overall throughput, to lower the delay, to maintain _____semantics of TCP, and to provide a more efficient handover.
12. If the MH is disconnected, _____ avoids useless retransmissions,
13. In _____, SH does not act as proxy as in I-TCP.