This question paper contains 3 printed pages.

6261   Your Roll No . ...

M.Sc. COMPUTER SCIENCE / II Sem.

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MCS - 204 - Advanced Computer Networks
(Admissions of 2009 and onwards)

Time   2 hours   *Maximum Marks   50*

*(Write your Roll No on the top immediately
on receipt of this question paper)*

Answer all questions

1 a) In an QAM modulation scheme, the number of
amplitude levels are 16 and the number of phase levels
are 32 The maximum data rate possible is 14 4kbps
What is the bandwidth allocated to the Modem ?   *05*

   b) In CDMA multiple access scheme, the total **bandwidth**
allocated is 2MHz The data rate of each **channel is**
10kbps Show that the number of uplink and **downlink**
channels are same for -
   (i) CDMA / FDD.
   (ii) CDMA / TDD   *05*

2 a) In amplitude modulated voice transmission, the
maximum signal frequency is 20KHz and the carrier
frequency is 100KHz. What would be its frequency
spectrum ? How would the frequency spectrum change
if the modulation scheme is frequency modulation ?   *05*

   b) In a thickly populated city with lot of intrusions, which
of the following WLAN technologies would you
prefer -

                              P T O

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      (i) Direct sequence spread spectrum,

      (ii) Frequency Hopping spread spectrum ?

     Justify your answer   *05*

3   a) Why are the following mechanisms not possible in WLAN ?

       (i) Collision detection,

       (ii) Carrier sensing   *05*

    b) Which of the following modes of WLAN take care of hidden terminals ?

       (i) basic mode,

       (ii) RTS / CTS mode.

     Justify your answer   *05*

4   a) What is hand-off in CSM cellular network ? How is it done?   *05*

    b) In the GSM mobile network, how does a mobile station know -

       (i) That it has a call,

       (ii) What uplink and down link channels has been allocated to it ?   *05*

5   a) How does Wireless Local Loop serve the following applications ?

       (i) Constant bit rate voice application,

       (ii) Variable bit rate real - time application ?   *05*

    b) Given the same total bandwidth, same channel data rate and the same modulation scheme, which of the following technologies would support more number of

uplink and downlink channels ?

(i)   TDMA / FDD,

(ii) CDMA / FDD.

Justify your answer   *05*