

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Wireless Communication

Subject Code: 4TE06WCM1

Branch: B.Tech (EC)

Semester: 6

Date: 13/05/2016

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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Q-1 Define the following terms: (14)

- a) Erlang
- b) Grade of Service
- c) Set-up Time
- d) Blocked Call
- e) Holding Time
- f) Traffic Intensity
- g) Request Rate
- h) Base station
- i) Forward channel
- j) Half duplex system
- k) Handoff
- l) Page
- m) Roamer
- n) Transceiver

Attempt any four questions from Q-2 to Q-8

Q-2 Attempt all questions (14)

- (a) Explain paging system in detail with diagram.
- (b) Explain with the timing diagram for a call established by landline subscriber to the mobile user.

Q-3 Attempt all questions (14)

- (a) Write a note on evolution for 2.5G TDMA standards.
- (b) Write a note on 3G W-CDMA (UMTS).

Q-4 Attempt all questions (14)

- (a) (1) With figure explain the concept of frequency reuse
(2) With figure explain hand off scenario at cell boundary.
- (b) Enlist different popular techniques used for improving coverage and capacity in cellular systems. Explain any one of them



- Q-5** **Attempt all questions** **(14)**
- (a) Describe the factors influencing the small scale fading.
- (b) Consider a transmitter which radiates a sinusoidal carrier frequency of 1850Mhz.For a vehicle moving 60 mph, compute the received carrier frequency if the mobile is moving: (1) Directly toward the transmitter. (2) Directly away from the transmitter. (3) In a direction which is perpendicular to the direction of arrival of transmitted signal.
- Q-6** **Attempt all questions** **(14)**
- (a) Write a note on impulse response model of a multipath channel.
- (b) Enlist different small scale multipath measurement techniques and explain one of them
- Q-7** **Attempt all questions** **(14)**
- (a) Enlist the different quantization techniques and explain in detail any two of them
- (b) Explain Sub-band coding with block diagram.
- Q-8** **Attempt all questions** **(14)**
- (a) Write a note on Frequency Division Multiple Access (FDMA). Describe non linear effects in FDMA. Also write equation for number of channels that can be simultaneously supported in a FDMA system.
- (b) Write a note on Code Division Multiple Access (CDMA).

