

(A-36)

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SARDAR PATEL UNIVERSITY
M.Sc. Semester IV [Electronics & Communication]
PS04CELC01: Mobile Communication
21st April 2015 Tuesday
10:30 AM to 1:30 PM

Total Marks: 70

Note: Figures to the right indicate maximum marks.

Q 1 Choose the correct Answer.**[08]**

1. _____ is the central coordinating element for all cell sites and contains cellular processor and cellular switch.

a) Mobile units	b) MTSO
c) Base station	d) None of them
2. $\bar{D} = \frac{1}{K} R$ for $K = 7$.

a) 3.46	b) 4.6
c) 6	d) 7.55
3. Co-channel interference reduction factor is given by _____.

a) $D \times R$	b) D/R
c) R/D	d) None of them
4. $\eta_c =$ _____ during busy hours.

a) 0.4	b) 0.5
c) 0.6	d) 0.8
5. The foliage loss along the radio path at 800 MHz is _____.

a) 40 dB/dec	b) 50 dB/dec
c) 60 dB/dec	d) 80 dB/dec
6. The 1-mi intercept level in a suburban area is _____.

a) -61.7 dBm	b) 61.7 dBm
c) -6.17 dBm	d) 6.17 dBm
7. The _____ stores the data of mobile equipment or its related data.

a) EIR	c) AUC
c) STP	d) VLR
8. The _____ functions as the paging channel for responding to the mobile originating calls.

a) forward set-up channel	b) reverse set-up channel
c) access channel	d) None of them

Q 2 Answer in short (Any seven):**[14]**

1. What are the limitations of conventional mobile telephone system?
2. Explain mobile originated calls.
3. What is call termination?
4. What is cross-talk?
5. What is co-channel interference?
6. Why there is constant deviation along path?
7. Explain near-in distance propagation.
8. What are the advantages of digital cellular system?
9. What is frequency reuse?

- Q 3 (a) Explain basic cellular system in detail. [06]
(b) Discuss the performance criteria of cellular system. [06]
OR
(b) What is cell splitting? Also discuss different techniques of cell splitting. [06]
- Q 4 (a) Explain the term "adjacent channel interference". How it can be reduced? [06]
(b) Design a directional antenna system in K=7 and K=4 cell pattern and compare them [06]
OR
(b) Discuss the designing of an omnidirectional antenna system in the worst case. [06]
- Q 5 (a) What is foliage loss? Discuss the different parameters on which it depends? [06]
(b) Discuss lee's point-to-model. [06]
OR
(b) Discuss various methods for improving the coverage & capacity in cellular system [06]
- Q 6 (a) Write a short note on GSM architecture. [06]
(b) What is frequency management and channel assignment? Explain in detail. [06]
OR
(b) Explain the function of : Setup channel, access channel, paging channel. [06]