[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2068)

18254(M)

B. Tech 6th Semester Examination

Wireless & Mobile Communication (CBS)

EC-606

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

SECTION - 1
Attempt any one question.

1. Explain cell sectoring and microcell zoning in detail. (10)

2. Explain in detail the capacity of cellular communication networks with respect to cluster size. (10)

SECTION - 2
Attempt any one question.

3. For the knife edge geometry, show that (A) $\Phi=2\pi\Delta/\lambda=2\pi/\lambda \{h^2/2(d_1+d_2/d_1d_2)\}$ and (B) $v=\alpha\sqrt{[2d_1d_2/\lambda(d_1+d_2)]}$ where $v^2\ \pi/2=\Phi$. (10)

4. Describe ground reflection model for mobile radio wave propagation. (10)

SECTION - 3
Attempt any one question.

5. Explain GSM architecture with diagram and hierarchy of frames. (10)

6. What is MANET, how it is different from wireless network? (10)

SECTION - 4
Attempt any one question.

7. Explain block diagram of Direct Sequence Spread Spectrum with Coherent BPSK (DS/BPSK). (10)

8. Write short note on OFDMA and MC-CDMA. (10)

SECTION - 5
Attempt all questions. Each carries 2 marks.

9. (i) Explain Doppler spread and rms delay spread.

   (ii) Draw and explain fast frequency fading channel model.

   (iii) What are the factors which influence small scale fading?

   (iv) Explain the dependence of surface roughness on the frequency and angle of incidence.

   (v) Derive the equation for log normal shadowing method.

   (vi) Explain reflection from perfect conductors.

   (vii) Describe all the physical circumstances that relate to a stationary transmitter and a moving receiver such that the Doppler shift at receiver is equal to (a) 0 Hz (b) $f_{d\ max}$.

   (viii) Define near field communication (NFC) systems.

   (ix) Explain frequency diversity technique.

   (x) Write short note on wireless local loop (WLL) network.

(10×2=20)