

- (b) Discuss the advantages and limitations of 4G-LTE system. 7.5

(Compulsory Question)

9. (a) Differentiate the flat fading and selective fading.
(b) Discuss the significance of borrowing strategy of channel assignment.
(c) How power control is done in CDMA system ?
(d) Define the term Doppler Shift.
(e) Differentiate the FDD and TDD.
(f) If number of cells in a cluster is 14, then find the value of co-channel reuse ratio.
(g) What is the difference between multicasting and simulcasting ?
(h) Discuss the importance of GPRS.
(i) What are VANETS ?
(j) How is HLAN different from LAN ?

1.5×10=15

J-21-0109

B. Tech. EXAMINATION, 2021

Semester VI (CBCS)

WIRELESS AND MOBILE COMMUNICATION

EC-606

Time : 2 Hours

Maximum Marks : 60

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from any of the Sections A, B, C and D.
Q. No. 9 is compulsory.

Section A

1. (a) With the help of a suitable diagram, differentiate the case of improper and proper handoffs, considering the handoff scenario at cell boundary. 7.5

- (b) Differentiate the hard hand-off and soft hand-off. 7.5
2. (a) Define frequency reuse. Discuss the method of locating co-channel cells in a cellular system with a suitable diagram and expression. 7.5
- (b) What are the various capacity improvement techniques in cellular system ? Discuss. 7.5

Section B

3. (a) Explain the selection and maximal ratio diversity techniques. 7.5
- (b) Define the term path loss. Discuss the practical link budget design using path loss models. 7.5
4. (a) What is the difference between the slow fading and fast fading ? 7.5
- (b) Define Coherence Bandwidth. How does it affect fading in multichannels ? 7.5

Section C

5. (a) What is a wireless sensor network ? Discuss its importance with a help of a suitable example. 7.5

- (b) What is the difference between the wireless adhoc network and wireless mesh network ? 7.5
6. (a) Explain GSM architecture in detail. Discuss the various GSM burst structures for logical channels. 7.5
- (b) A normal GSM has 3 start bits, 3 stop bits, 26 training bits for allowing adaptive equalization, 8.25 guard bits and 2 bursts of 58 bits of encrypted data which is transmitted at 302.44 kbps in the channel. Find the TDMA frame efficiency. 7.5

Section D

7. (a) Discuss the principle of OFDMA with suitable diagram. 7.5
- (b) What is the need of spread spectrum modulation ? Explain the fast hopping spread spectrum modulation technique. 7.5
8. (a) Draw the block diagram of forward channel CDMA. Discuss the functionality of each block. 7.5