

8. Write technical notes on the following :

- (i) Hata Model 10
- (ii) GSM Signalling and call control. 10

No. of Printed Pages : 04

Roll No.

W-833

B. Tech. EXAMINATION, Dec. 2017

(Eighth Semester)

(Weekend) (Re-appear Only)

(ECE)

ECE-W-406

MOBILE COMMUNICATION

Time : 3 Hours]

[Maximum Marks : 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Assuming free space propagation, a receiver is located 15 km away from a

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20

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60W transmitter. The carrier frequency is 800 Mz and the antenna gain at the transmitter and receiver is 2 and 1 respectively. Calculate :

- (i) Power received at the receiver
- (ii) Power flux density
- (iii) RMS voltage applied to the receiver input if the receiver antenna has 50 ohm impedance and is matched to the receiver. **10**

(b) What do you mean by modulation and why it is required in mobile communication ? **10**

2. (a) What are the design issues involved in mobility management in wireless networks ? **10**

(b) Differentiate between 3G W-CDMA with 3G cdma2000. **10**

3. (a) An antenna is operating at a frequency of 800 MMHz. Calculate the path loss if the antenna has a maximum dimension of 2m and a gain of unity. **10**

(b) Explain the various physical factors in radio propagation channel that influence small scale fading. **10**

4. Define the following terms :

- (i) Time dispersion
- (ii) Coherence time
- (iii) Doppler spread
- (iv) Coherence bandwidth. **20**

5. What are the characteristics of MANET ? How it works ? What are the challenges faced by it ? State its applications. **20**

6. (a) Describe the GSM system architecture. **10**

(b) What are the essential requirements of wireless LAN ? **10**

7. (a) What are the factors upon which free space path loss depends ? Derive the necessary relationship. **10**

(b) Enlist the IS-95 forward traffic channel modulation parameters. **10**