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22152

M. Tech. 2nd Semester (E.C.E.) Examination – May, 2016

WIRELESS MOBILE COMMUNICATION

Paper : MEEC-508

Time : Three Hours] *[Maximum Marks : 100*

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

Note : Attempt any *five* questions out of given *eight*.

1. (a) List and describe the three types of data flow in Wireless Communication. 5

(b) List some potential applications of RFID technology. 5

(c) Compare the technical parameters of US, European and Japanese cellular standards. 5

(d) Discuss how wireless networks can reduce installation time and cost. 5

2. (a) Define the terms : 10

(i) Fade rate

(ii) Average fade duration

(iii) Depth of fading

(b) Distinguish between AWGN channel, Rayleigh fading channel and Rician fading channel in Wireless Environment. 10

3. (a) Determine the coherence bandwidth corresponding to a delay spread of 1 micro-second. 5

(b) What is meant by coherence bandwidth ? Give its expression. 5

(c) What is meant by foliage ? Define foliage loss. 5

(d) Comment on the gain of receiver antennas. 5

4. (a) What is the coverage of a cell-site that transmits 100 W of powers, given that the receiver sensitivity is –100 dBm, the path loss at the first meter is 32 dB and the path loss gradient is 4. 10

(b) Explain the concept of time dispersion. Give the practical case to explain the concept. 10

5. What is diversity ? Why it is required ? Explain various types of diversity techniques. 20

6. (a) Why is a voice activity detector incorporated in the GSM speech coder ? 5

(b) Classify GSM services into different categories. 5

(c) Which channels are defined as CCCH logical control channels ? 5

(d) Distinguish between vehicle-mounted, portable and handhold mobile phones. 5

7. (a) What are packet radio protocols ? Explain. 10

(b) Compare Hard and Soft Hand offs in GSM. 10

8. Write short notes on the following : $2 \times 10 = 20$

(a) IS-95

(b) GPRS