Rev. 307 – M.E (EXTC) Sem II (Old)
Mobile & Wireless Comm.

**QP Code : 62890**

(3 Hours) [ Total Marks:80

N.B. : (1) **All** questions are **compulsory**.
(2) Answer any **four** questions.
(3) **Figures** to the **right** indicate **full** marks.

1. (A) Why shape the antenna field pattern? Explain. 5
(B) Discuss power control in WCDMA and CDMA 2000. 5
(C) Explain security aspect of Bluetooth. 5
(D) Compare various WI-FI significant standards. 5

2. (A) Describe GSM call set up procedure in detail. 10
(B) Discuss IMT-2000 system in detail. 10

3. (A) A cellular Service provider to use a TDMA scheme that can tolerate a signal to interference ratio of 16 db in worst case .Find the optimum value of cluster size 'N' in case of:- 10
(i) Omni directional antenna
(ii) 120° sectoring and
(iii) 60° sectoring
Which sectoring will be better 60° or 120° ? Assume path loss component n =4
(B) Explain forward and reverse channel of WCDMA in detail. 10

4. (A) Explain intelligent cell concept and its application. 10
(B) Explain with neat diagram function of adaptive equalizer in details. 10

5. (A) Compare Hiper-LAN2 with IEEE 802.11a/b. Highlight advantage and disadvantage of Hyper-LAN technology. 10
(B) Explain following terms 1) Mobile IP and Mobility Managen:tent 10
2) Location management in MANET

6. Write short notes on. **(any two)** 20
(a) Diversity technique
(b) GPRS technology
(c) EDGE Technology

ME (E+TC) : SEM. II (CBSGS) NOV - 2016
M.M.M.C.S.

**QP Code : 62893**

(3 Hours) [ Total Marks : 80

N.B. : (1) Question Number 1 is compulsory.
(2) Attempt any three questions from remaining.
(3) Assume suitable data if required.

1. (a) Discuss use of PN sequence as preamble in SC-FDE system. 5
(b) What is power efficiency of a modulation scheme? Why is it important at millimeter wave frequencies? 5
(c) Explain research trend: transceiver siliconization. 5
(d) What is meant by coexistence with wireless backhaul? 5

2. (a) Compare millimeter wave UWB radio and optical wireless technologies. 10
(b) Give advantages of $\pi/4$ QPSK over other QPSK modulation schemes and explain its modulator with block diagram. 10

3. (a) Explain receiver threshold and determine noise power for an equivalent noise bandwidth of 10 MHz. 10
(b) Explain protection switching arrangements with neat block schematic. 10

4. (a) Explain operational principle of OFDM with symbol pattern. 10
(b) Discuss working principle of 4-QAM with constellation diagram. Also explain bit error probability of QAM signal. 10

5. (a) What is software radio? Explain transceiver without mixer. 10
(b) What is polarization? Explain polarization diversity with reference to millimeter wave antenna design. 10

6. (a) Explain noise coupling in a MIMO system and derive the formula for the total noise for two coupled antenna elements. 10
(b) Write acquisition and tracking algorithm for beam steering. 10

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