B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2017

ADVANCED 3G & 4G WIRELESS COMMUNICATION

(Electronics & Communication Engineering)

Time: 3 hours Max. Marks: 70

PART - A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) Distinguish between FDM and OFDM.
(b) What is OVSF?
(c) Write 2G standards and the data rates support by them.
(d) Compare wired and wireless communication systems.
(e) Define delay spread.
(f) Define handover and mention its types.
(g) Mention the advantages of MIMO-OFDM technology.
(h) Write the differences between GPS and GPRS.
(i) Explain 4G – LTE.
(j) Specify the chip rates, modulation schemes used in cdma2000 and WCDMA technologies.

PART - B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2 Derive an expression to obtain Rayleigh fading density & draw the plot.

OR

3 Explain in detail the BER of wireless communication systems.

UNIT - II

4 Discuss Jakes model for wireless channel correlation.

OR

5 Discuss cellular processes.
(a) Call setup.
(b) Handover.

UNIT - III

6 (a) Sketch the block diagram and clearly explain RAKE receiver used in CDMA.
(b) Write short notes on Walsh codes.

OR

7 State significance of cyclic prefix and write merits and demerits of cyclic prefix.

UNIT - IV

8 Derive an expression for optimal power allocation of MIMO SVD channel to achieve maximum capacity.

OR

9 In detail clearly explain the single band UWB modulation schemes.

UNIT - V

10 (a) List the features of WiMAX.
(b) Discuss in detail about WiMAX.

OR

11 (a) Sketch and explain the architecture of WCDMA.
(b) Mention the salient features of WCDMA.