Roll No. ....

OLE-22676

M.Tech. 3rd Semester (ECE) CBCS Scheme Examination – April, 2021

CDMA

Paper : 16ECE23C2

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 *five* questions in total. All question carry equal marks. Question Number **1** is *compulsory*. Attempt one question from each unit.

1. (a) Explain BTS assisted Soft Handoff in CDMA.

   (b) Why CDMA is also called Interference limited system ?

   (c) Explain working of Vocoder in CDMA system.

   (d) Explain characteristics and functions of pilot channel.

   (e) Discuss fixing of CDMA based cellular system cell size. $4 \times 5 = 20$

UNIT – I

2. (a) Explain working principle of Frequency hopped spread spectrum with the help of wave diagram. 10

   (b) Give out properties and application of Walsh code. 10

3. (a) Why PN sequences are not called random sequences ? Also enumerate the properties of PN sequences. 10

   (b) How to ensure that the Maximal Length Pseudorandom Sequences generated are error free ? 10

UNIT – II

4. (a) Define error probability and for an AWGN channel, derive the equation for error probability for DS CDMA system. 10

   (b) Explain working principle of RAKE receiver with the help of a diagram. 10

5. (a) Discuss briefly forward link Control channels of IS 95 CDMA system along with their functions. 10

   (b) Derive the equation for measuring performance of cellular CDMA system.

UNIT – III

6. What are the modalities to determine Capacity of CDMA system ? Why it is said that capacity of CDMA system is dominated by reverse link ? Justify your answer in details. **20**

7. (a) Why Reverse link power control is critical in CDMA system ? Discuss in details the mechanism to exercise reverse link power control. **10**

    (b) Explain open loop power control mechanism in CDMA system. **10**

UNIT – IV

8. How CDMA 2000 is superior than IS-95A CDMA system ? Justify your answer with respect to Channels (forward and reverse link) and Walsh code management. **20**

9. Write short notes on the followings : **10 × 2 = 20**

    (a) Multi user detection

    (b) Wide band CDMA

––––––––––––