	Utech
Name :	A
Roll No.:	On Street Of Executings 2nd Explored
Invigilator's Signature :	

CS/M.Tech(MCNT)-OLD/SEM-1/MC-103/2011-12 2011

ADVANCED DIGITAL COMMUNICATION & CODING

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

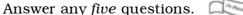
GROUP - A

- 1. Write short notes on any *two* of the following: $2 \times 5 = 10$
 - a) Match filter
 - b) Optimum filter
 - c) $\frac{\pi}{4}$ QPSK modulation
 - d) GSM.

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GROUP - B





- 2. a) Draw the schematic diagram for modulation and demodulation for BFSK. What will be the BER?
 - b) Draw the schematic diagram for modulation and demodulation for MSK. What will be the BER?
- 3. a) What will be the modulation and demodulation scheme for M-ary PSK? What will be the BER?
 - b) What will be modulation and demodulation scheme forM-QAM? What will be the BER?6
- 4. a) Write a short note on synchronous CDMA modulation and Optimum demodulation. 5
 - b) Write how to improve on optimum demodulation byusing Decision Feedback Cancellation scheme.
- 5. a) How to model a Rayleigh faded channel with a vehicular speed of v?
 - b) How to model a frequency selective channel?



- 6. a) What is ISI? How to equalize the channel by adaptive methods?
 - b) Derive the LMS adaptation law for decision direct mode.7
- 7. a) What are *m*-sequence and Gold sequences? Write the properties of *m*-sequence.
 - b) Find the *m*-sequence and Gold sequences for the polynomials $g(x) = x^5 + x^4 + x^2 + x + 1$ and $g(x) = x^5 + x^2 + 1.$

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