

Code: **ECMC1T3**

**I M.Tech - I Semester-Regular/Supplementary Examinations
January 2017**

**ADVANCED DIGITAL COMMUNICATIONS
(MICROWAVE & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) Explain the detection of QPSK and QAM in Noise. 7 M

- b) Explain the properties of the continuous communication channel. 7 M

2. a) Differentiate linear equalization and decision feedback equalization. 7 M

- b) Explain Turbo equalization. 7 M

3. a) Draw and explain the block diagram of an adaptive zero-forcing equalizer. 7 M

- b) Explain the concept of blind equalization. 7 M

4. a) Compare Direct Sequence Spread Spectrum and Frequency Hopping Spread Spectrum. 7 M
- b) What is time hopping spread spectrum? Explain how it is different from other spread Spectrum. 7 M
5. a) Explain Rayleigh and Nakagami fading techniques. 7 M
- b) Discuss the performance of RAKE demodulator. 7 M
6. a) Differentiate sub-optimum linear receivers and sub-optimum nonlinear receiver structures. 7 M
- b) Explain the single user matched filter receiver with a neat block diagram. 7 M
7. a) Describe Hamming distance considerations for convolution codes. 7 M
- b) Explain maximum likelihood decoding and derive the expression for error probability. 7 M
8. a) Draw and explain the block diagram of convolutional interleaver. 7 M
- b) Explain OFDM as multicarrier transmission. 7 M