Government College of Engineering, Aurangabad

(An Autonomous Institute of Government of Maharashtra)

M. E. (Electronics) Examination (2016-2017)

ET 544 Digital Communication Systems

5 DEC 2016

Time: Three Hours   Max Marks 60

Note:
- Solve any four questions
- Assume suitable data if necessary

Q1   a   When a signal is reconstructed from sequence of sample values {g(n/2w)} , prove that,   9

$$g(t)= \sum_{n=-\infty}^{n=\infty} g\left(\frac{n}{2w}\right) Sinc(2Wt)$$

b   What is the need of Time Division Multiplexing the signal? Explain with suitable example.   6

Q2   a   Explain the Frequency Domain Representation of low pass signals and band pass signals with diagram.   8

b   Describe Pulse Code Modulation (PCM) transmitter and receiver.   7

Q3   a   Explain working of BFSK transmitter and receiver. Draw frequency spectrum of BFSK signal.   8

b   Derive an expression for bandwidth of M-ary PSK.   7

Q4   a   Explain Cyclic coding with suitable example.   9

b   Explain Inter Symbol Interference with diagram.   6

Q5   Write Short notes (any three)

a   Direct Sequence Spread Spectrum   5

b   PN sequence generation   5

c   Probability of Error   5

d   Slow Frequency Hopping Spread Spectrum   5