PVP 17

Code: **17ECMC2T2**

I M.Tech - II Semester – Regular/Supplementary Examinations
July - 2019

SIGNAL PROCESSING FOR COMMUNICATIONS
(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 60

Answer the following questions.

1. a) What is orthonormal basis? Explain its Properties. 8 M

   b) What is Hilbert space? Explain with examples. 7 M

OR

2. a) Define DTFT. State and prove the Parseval's property of DTFT. 7 M

   b) Write the relationship between DTFT and DFS. 8 M

3. a) What is ideal highpass filter? Derive the impulse response of ideal highpass filter. 7 M

   b) Explain the FIR filter design based on the windowing method. 8 M

OR

4. a) What is impulse function? Explain its properties. 7 M

b) Find the frequency response of the moving average filter. 8 M

5. a) What is random process? Explain spectral representation of a stationary random process with an example. 7 M

b) What is down sampling? Explain the frequency domain representation of down sampling with an example. 8 M

OR

6. a) Describe frequency domain analysis of stochastic signal processing. 7 M

b) Explain oversampled D/A conversion with neat waveforms. 8 M

7. a) What are the two fundamental constraints of a communication system? Explain in detail. 7 M

b) Explain the constraints related to the design of communication receiver. 8 M

OR

8. Write short notes on:

a) Communication Channel 8 M

b) Hilbert Demodulation 7 M